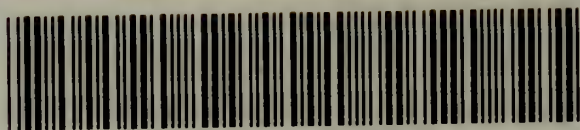


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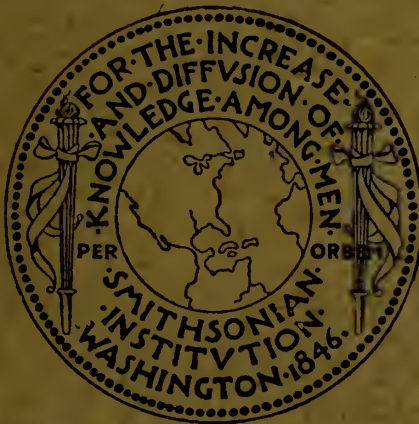
VOLUME 63, NUMBER 10

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VALLEY, NEW MEXICO

(WITH EIGHT PLATES)

BY

J. WALTER FEWKES



(PUBLICATION 2316)

CITY OF WASHINGTON
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ARCHEOLOGY OF THE LOWER MIMBRES VALLEY, NEW MEXICO

By J. WALTER FEWKES

(WITH EIGHT PLATES)

INTRODUCTION

Evidences of the existence of a prehistoric population in the Lower Mimbres Valley, New Mexico, have been accumulating for many years, but there is little definite knowledge of its culture and kinship. It is taken for granted, by some writers, that the ancient people of this valley lived in habitations resembling the well-known terraced dwellings called pueblos, many of which are still inhabited along the Rio Grande; but this theory presupposes that there was a close likeness in the prehistoric architectural remains of northern and southern New Mexico. It may be said that while there were many likenesses in their culture, the prehistoric inhabitants of these two regions possessed striking differences, notably in their architecture, their mortuary customs, and the symbolic ornamentation of their pottery.

As the former inhabitants of the Mimbres Valley have left no known descendants of pure blood, and as there is a scarcity of historical records, we must rely on a study of archeological remains to extend our knowledge of the subject. Much data of this kind has already been lost, for while from time to time numerous instructive relics of this ancient culture have been found, most of these objects have been treated as "curios" and given away to be carried out of the country, and thus lost to science. Some of these relics belong to a type that it is difficult to duplicate. For instance, it is particularly to be regretted that the numerous votive offerings to water gods, including fossil bones, found when the "sacred spring" at Faywood near the Mimbres was cleaned out, have not been studied and described by some competent archeologist. The arrowheads, lance-points, and "cloud-blowers" from this spring are particularly fine examples, the most important objects of the collection being now in the cabinet of Mrs. A. R. Graham of Chicago.¹

¹ In a letter to Professor W. H. Holmes, published in his paper, "Flint Implements and Fossil Remains from a Sulphur Spring at Afton, Indian Terri-

The valley of the Mimbres has never been regarded as favorable to archeological studies, but has practically been overlooked, possibly because of the more attractive fields in the regions to the north and west, so that only very meager accounts have been published.¹

The present article, which is a preliminary report on an archeological excursion into this valley in May and June, 1914, is an effort to add to existing knowledge of the archeology of the valley. During this reconnaissance the author obtained by excavation and purchase a collection of prehistoric objects which have added desirable exhibition material to the collections in the U. S. National Museum.²

HISTORICAL

The recorded history of the inhabitants of the Mimbres is brief. One of the earliest descriptions of the valley, in English, is found in Bartlett's "Personal Narrative," published in 1854. In his account of a trip to the copper mines at the present Santa Rita, Bartlett records seeing a herd of about twenty black-tailed deer, turkeys and other game birds, antelopes, bears, and fine trout in the streams. He

tory," Mr. A. R. Graham gives an instructive account of cleaning out the Faywood Hot Springs where he found the following relics: (1) parts of skulls and bones of several human beings; (2) over fifty spearheads and arrowheads of every shape and style of workmanship, the spearheads being valuable for their size and symmetry; (3) nine large warclubs made of stone; (4) a large variety of teeth of animals as well as large bones of extinct animals; (5) the most interesting relics are ten stone pipes from four to seven inches in length; (6) flint hatchet and a stone hammer, together with stones worn flat from use; beads made of vegetable seed and bird bones; part of two Indian bows with which was found a quiver in which was quite a bunch of long, coarse black hair that was soon lost after being dried.—*Amer. Anthropol.*, n. s., vol. 4, pp. 126, 127.

¹The Santa Rita mines early attracted the conquistadors looking for gold, and were worked in ancient times by the Spaniards, the ores obtained finding an outlet along a road down the valley to the city of Chihuahua. The prehistoric people also mined native Mimbres copper, and probably obtained from these mines and from those in Cook's Range, the native copper from which were made the hawk-bells sometimes found in Arizona and New Mexico. From these localities also were derived fragments of float copper often found in Southwestern ruins and commonly ascribed to localities in Mexico. From here came also a form of primitive stone mauls used in early days of the working of the mines.

²The National Museum had nothing from the Lower Mimbres before this addition, although it has a few specimens, without zoic designs, from Fort Bayard, in the Upper Mimbres. The latter are figured by Dr. Hough, Bull. 87, U. S. National Museum.

says very little, however, about antiquities, although he passed through a region where there are still several mounds indicating ruins. Bartlett writes (*op. cit.*, vol. I, p. 218) :

On April 29, hearing that there were traces of an ancient Indian settlement about half a mile distant, Dr. Webb went over to examine it, while we were getting ready to move. He found a good deal of broken pottery, all of fine texture. Some of it bore traces of red, black, and brown colors. He also found a stone mortar about eight inches in diameter. I have since understood that this was the seat of one of the earliest Spanish missions ; but it was abandoned more than a century ago, and no traces remain but a few heaps of crumbling adobes, which mark the site of its dwellings.

This ruin was situated near the Rio Grande, twenty-three miles from Mule Spring, on the road to the Mimbres. Bartlett does not tell us how he learned that this was an early mission site, but from the pottery it is evident that it was an " ancient Indian settlement."

After having examined the configuration of the country through which Bartlett passed, and having compared it with statements in his description, the present writer thinks that Bartlett camped on May 1, 1853, near the Oldtown ruin and that the place then bore the name Pachetehu. This camp was nineteen [eighteen?] miles from Cow Spring and thirteen miles from the copper mines.

Bartlett records that he found, near his camp, " several old Indian encampments with their wigwams standing and about them fragments of pottery." Although not very definite, these references might apply either to the Oldtown ruin and some others a few miles up the river, or to more modern Apache dwellings.

Mr. F. S. Dellenbaugh claims that Coronado, in 1540, passed through the valley of the Mimbres on his way to Cibola, and that this place was somewhere in this region, instead of at Zuñi, as taught by Bandelier and others. The present writer recognizes that the question of the route of Coronado is one for historical experts to answer, but believes that new facts regarding the ruins in the Mimbres may have a bearing upon this question and are desirable. While it can no longer be said in opposition to Dellenbaugh's theory that there are no ruins in the valley between Deming and the Mexican border, we have not yet been able to discover whether the ruins here described were or were not inhabited in 1540.

The fragmentary notice of the ruins in the Upper Mimbres and Silver City region by Bandelier is one of the best thus far published, although he denies the existence of ruins now known in the great

stretch of desert from Deming to the Mexican boundary. Regarding the ruins on the Upper Mimbres, Bandelier writes:¹

Toward this center of drainage the aboriginal villages on the Rio Mimbres have gravitated as far south nearly as the flow of water is now permanent. They are very abundant on both sides of the stream, wherever the high overhanging plateaux have left any habitable and tillable space; they do not seem to extend east as far as Cook's Range, but have penetrated into the Sierra Mimbres farther north, as far as twenty miles from the river eastward. . . . The total number of ruins scattered as far north as Hincks' Ranch on a stretch of about thirty miles along the Mimbres in the valley proper, I estimate at about sixty. . . . I have not seen a village whose population I should estimate at over one hundred, and the majority contained ten. They were built of rubble in mud or adobe mortar, the walls usually thin, with overwings, and a fireplace in the corner, formed by a recess bulging out of a wall. Toward the lower end of the permanent water course, the ruins are said to be somewhat extensive.

Professor U. Francis Duff, in an article on the "Ruins of the Mimbres Valley,"² adds a number of new sites to those mentioned above and contributes important additions to our knowledge of the prehistoric culture of the valley.

Dr. Walter Hough, who compiled from Bandelier and Duff, and made use of unpublished information furnished by Professor De Lashmutt and others, enumerates twenty-seven ruins in the Silver City and Mimbres region to which he assigns the numbers 147-174. Many more ruins³ might have been included in this list, but it is not the author's purpose, at this time, to mention individual pueblo sites but rather to call attention to the evidences of ruins in the Lower Mimbres Valley as an introduction to the study of pottery there collected. The ruin from which the majority of the bowls here considered were obtained does not appear to have been mentioned by Bandelier, Duff, or Hough.

The last-mentioned author makes the following reference to figures on the pottery from the Mimbres region: "The decoration is mainly geometric. From the Mimbres he [Professor De Lashmutt] has seen a realistic design resembling a grasshopper, and from Fort Bayard another representing a four-legged creature. Mrs. Owen has a

¹ Archæological Institute of America, American Series, vol. 4, Final Report, Part 2, pp. 356, 357.

² American Antiquarian, vol. 24, p. 397, 1902.

³ Bandelier (*op. cit.*, p. 357) speaks of sixty ruins in a small section thirty miles along the river.

specimen from Fort Bayard bearing what is described as a 'fish design.'"¹ Dr. Hough likewise points out that

pottery from some sites [ruins] is also different from that of any other [Pueblo] region and is affiliated, in some respects, with that of the Casas Grandes, in Chihuahua which lies in the low foot-hills of Sierra Madre. This is especially true in reference to fragments of yellow ware found here [the Florida Mountains] which in both form and color of decoration is manifestly like that of Casas Grandes.²

The latest and thus far the most important contribution to our knowledge of the prehistoric people of the Mimbres we owe to Mr. C. L. Webster, who has published several articles on the antiquities of the Upper Mimbres, in "The Archæological Bulletin." He has made known several new village sites along the valley and has mentioned, for the first time, details regarding Mimbres ruins and the objects found in them. Practically nothing has thus far been recorded on the antiquities of the region immediately about Deming, nor of those south of that important railroad center to the Mexican border.

In an article on "Some Burial Customs Practiced by the Ancient People of the Southwest,"³ Mr. Webster describes and figures a human burial on the Lower Mimbres not far from the "Military Post," situated near Oldtown. It was found in the plain some distance from any indications of prehistoric settlement. He says:

An exploration of it [a burial] revealed that originally a circular excavation, perhaps three feet in diameter and slightly more in depth, had been made in the ground; and afterwards the body placed at the bottom of this excavation in a sitting posture with the knees somewhat drawn up and arms to the side, and then a very large earthen olla, of a reddish color, was set over it, bottom side up, thus protecting it from the earth which was afterwards thrown in, filling up the excavation.

Mr. Webster shows that the Mimbres aborigines did not always bury their dead in a contracted or seated posture. He speaks also of intramural or house burials in the valley of Rio Sapillo, a tributary of the Upper Gila, not far from the source of the Mimbres. In this region he dug down in one of the central rooms of a ruin about three feet below the surface, where he says (p. 73):

Near the bottom of this excavation hard red clay was encountered, which on opening up proved to contain the well-preserved skeleton of an adult person

¹ Bull. 35, Bur. Amer. Ethn., p. 83. See also an article subsequently published on the Culture of the Ancient Pueblos of the Upper Gila River Region, Bull. 87, 1913, U. S. National Museum, in which several bowls with geometrical designs from Fort Bayard are figured.

² Bandelier found that Mimbres pottery resembles that of several regions, including Casas Grandes.

³ The Archæological Bulletin, vol. 3, No. 3, p. 70.

which had been placed at length on its back with arms at its side. Over the face of this one [human burial] had been placed a rather large shallow dish, through the bottom of which a hole about the size of a five cent piece, or a little larger, had been carefully drilled. This hole was so located as to occupy a position between the eyes when placed over the face. This body was resting on a bed of red clay like that which had covered it. Near the first body was a second body which had been buried in exactly the same way, and had a similar perforated dish over its face. Under this first or upper tier of bodies a second tier of bodies was discovered which had been buried exactly the same way as the upper tier—each one resting separate and alone, though near together, each one tightly enveloped in stiff red clay.

All the vessels placed over the faces showed the action of fire, and it was plain to be seen they had once been used in cooking. . . . The method practised here was to first spread down a layer of red plastic clay, then lay the body upon it, place the perforated dish over the face and finally plaster all with a covering of the same clay. This same method was followed in every case observed.

SITES OF RUINS IN THE LOWER MIMBRES VALLEY

The portion of the Sierra Madre plateau called Lower Mimbres, or Antelope Valley, extends from where the Mimbres sinks below the surface at Oldtown to Lake Palomas in Mexico, twenty-five miles south of Deming. According to some writers this region has no prehistoric ruins, but several of the beautiful specimens described and figured in the present article came from this valley, and there are doubtless many others, equally instructive, still awaiting the spade of the archeologist. The purest form of the Mimbres prehistoric culture is found in the lower or southern part of this plain, but it extends into the hills far up the Mimbres almost to its source.

The plateau on which the prehistoric Mimbres culture developed is geographically well marked, and distinguished from other regions of the Southwest geographically and biologically, facts reflected in human culture. The cultural gateway is open to migrations from the south rather than from the east, north, or west.

The evidences drawn from the poor preservation of the walls of the ruins, and the paucity of historical references to them, instead of indicating absence of a prehistoric population suggest the existence of a very ancient culture that had been replaced by wandering Apache tribes years before the advent of the Spaniards. Chronologically the prehistoric people belongs to an older epoch than the Pueblo, and its culture resembles that which antedated the true Pueblos.¹

¹ During the author's stay in Deming he was much indebted to Dr. S. D. Swope for many kindnesses, among which was an opportunity to study his valuable collection, now in the high school of that city. He was also greatly

The ruins here considered do not belong to the same type as those of the Lower Gila and Salt, although they may be contemporaneous with them, and may have been inhabited at the same time as those on the Casas Grandes River in northern Chihuahua. Not regarded as belonging to the same series of ruins as those on the Upper Gila and Salt rivers, they are not designated numerically with them.

Although the indications of an ancient prehistoric occupancy of the Mimbres are so numerous, they are so indistinct and have been so little studied that any attempt here to include all of them would be premature. Remains of human occupancy occur in the plain about Deming, and can be traced northward along the river east and west into the mountains, and south into Mexico.

The author has observed many evidences of former settlements along the Upper Mimbres which have not yet been recorded. The indications are, as a rule, inconspicuous, appearing on the surface of the ground in the form of rows of stones or bases of house walls, fragments of pottery, and broken stone implements, such as metates and manos. These sites are commonly called "Indian graves," skeletons often having been excavated from the enclosures outlined by former house walls. There are also evidences of prehistoric ditches at certain points along the Mimbres, showing that the ancients irrigated their small farms.

No attempt is made here to consider all the ruins of the Mimbres or of the Antelope plain in the immediate neighborhood of Deming, but only those that have been visited, mainly ruins from which the objects here described were obtained.

Although few of the walls of the ancient buildings rise high above ground, they can be readily traced in several places. From remains that were examined it appears that the walls were sometimes built of stone laid in mortar and plastered on the inside, or of adobe strengthened at the base with stones and supported by logs, a few of which have been found in place upright. No differentiation of sacred and secular rooms was noticed, and no room could be identified as belonging to the type called kiva. The floors of the rooms were made of "caleche," hardened by having been tramped down; the fireplace was placed in one corner, on the floor, and the entrance to the room was probably at one side. To all intents and purposes these dwellings were probably not unlike those fragile wattle-walled structures found

aided by Mr. E. D. Osborn and several other citizens, and takes this opportunity to thank all who rendered assistance in his studies. The photographs reproduced in the present paper were made by Mr. Osborn.

very generally throughout the prehistoric Southwest, and supposed to antedate the communal dwellings or pueblos of northern New Mexico.

The two aboriginal sites in the Mimbres Valley that have yielded the majority of the specimens here figured and described are the Old-town ruin and the Osborn ruin, a small village site twelve miles south of Deming and four miles west of the Florida Mountains. There are some differences in general appearance and variations in the minor archeological objects from these two localities, but it is supposed that specimens from both indicate a closely related, if not identical, culture area.

About a year ago Mr. E. D. Osborn, of Deming, who had commenced excavation in these ruins,¹ obtained from them a considerable collection of pottery and other objects. His letters on the subject and his photographs of the pottery, sent to the Bureau of American Ethnology, first led the author to visit southern New Mexico to investigate the archeology of the Mimbres.

VILLAGE SITE NEAR OSBORN RANCH ²

A few extracts from Mr. Osborn's letters regarding this site form a fitting introduction to a description of the sites and the objects from them:

At the present time [December 8, 1913] the nearest permanent water to this place [site of the cemetery] is either the Palomas Lake in Mexico, twenty-five miles south, or thirty miles north, where the Mimbres River sinks into the earth. . . . This supposed Pueblo site is situated upon a low sandy ridge which at this point makes a right-angle bend, one part running south and the other west from the angle. The top and sides of the ridge, also the "flat" enclosed between the areas of the ridge, to the extent of about an acre, is littered all over with fragments, charcoal and debris containing bones to the depth of from one to three feet. There are also a great many broken metates and grinding stones. . . . In digging on top of this ridge, near the angle, we occasionally found what appeared to have been adobe wall foundations, but not sufficiently large to determine the size or shape of any building. In digging on the ridge a few stone implements were found, including one fine stone axe, stone paint pots and mortars, and a few arrowheads, also two bone awls and a few shell beads and bracelets, the last all broken. The only article of wood was the stump of a large cedar post full of knots, badly decayed; it had been burned off two or three inches below the surface of the ground. The cemetery was found on the inner slope of the angle facing the southwest. . . . In a

¹ Specimens were also found by Mr. Osborn at the Byron Ranch ruin, at the Black Mountain site, and elsewhere.

² This is the ruin called Osborn ruin in subsequent descriptions.

large proportion of cases the body was placed upon its back, feet drawn up against the body, knees higher than the head; sometimes the head was face up and sometimes it was pressed forward so the top of the head was uppermost. In other interments the body was extended its full length with face up. A large majority of the skulls had a bowl¹ inverted over them, though I judge twenty per cent were without any bowl. . . . In a great many instances after the body had been placed in the grave with bowl over the head, a little soil was filled in, and about one foot of adobe mud was added and tramped down then filled up with soil. This adobe mud is almost like rock, making it difficult to dig up the bowl without smashing it. . . . No article of any kind except the bowl over the head was found in any grave. In one case a bowl was found with a skull under it and under that skull was another bowl and another skull.

Few evidences of upright walls of buildings are found at or near this site. The surface of the ground in places rises into low mounds devoid of bushes, which grow sparingly in the immediate neighborhood, but no trees of any considerable size were noticed in the vicinity. Before work began at this place the only signs of former occupancy by aborigines, besides walls, were a few broken fragments of ancient pottery, metates, or a burnt stump protruding here and there from the ground. None of the house walls projected very high above the surface of the ground. Excavations in the floors of rooms at this point yielded so many human skeletons that the place was commonly referred to as a cemetery, but all indications support the conclusion that it was probably a village site with intramural interments.

The human burials here found had knees flexed or drawn to the breast in the "contracted" position, sometimes with the face turned eastward. The skeletons were sometimes found in shallow graves, but often were buried deeply below the surface. Almost without exception the crania had bowls fitted over them like caps. The graves as a rule are limited to soft ground, the bowls resting on undisturbed sand devoid of human remains. In some instances there appears to have been a hardened crust of clay above the remains, possibly all that is left of the floor of a dwelling. The indications are that here, as elsewhere, the dead were buried under the floors of dwellings, as is commonly the case throughout the Mimbres Valley. While there is not enough of the walls above ground to show the former extent

¹ On some of the skulls excavated at Sikyatki, Arizona, in 1895, the author found concave disks of kaolin perforated in the center. One of these disks is represented in Fig. 356, p. 729, 17th Ann. Rep. Bur. Amer. Ethnol. In an article on "Urn Burial in the United States" (*Amer. Anthropol.*, vol. 6, No. 5), Mr. Clarence B. Moore, quoting his own observations and those of many others, records burials in which an inverted mortar, bowl, basket, or other object was placed over the skull of the dead, and shows the wide distribution of the custom.

of the dwellings, the indications are that they were extensive and have been broken down and washed away.

OLDTOWN RUIN

Near where the Mimbres leaves the hills and, after spreading out, is lost in the sand, there was formerly a "station," on the mail route, called Mimbres, but now known as Oldtown. Since the founding of Deming, the railroad center, the stage route has been abandoned and Mimbres (Oldtown) has so declined in population that nothing remains of this settlement except a ranch-house, a school-house, and a number of deserted adobe dwellings.

Oldtown lies on the border of what must formerly have been a lake and later became a morass or cienega, but is now a level plain lined on one side with trees and covered with grass, affording excellent pasturage. From this point the water of the Mimbres River is lost, and its bed is but a dry channel or arroyo which meanders through the plain, filled with water only part of the year. In the dry months the river sinks below the surface of the plain near Oldtown reappearing at times where the subsoil comes to the surface, and at last forms Palomas Lake in northern Mexico.

In June, when the author visited Oldtown, the dry bed of the Mimbres throughout its course could be readily traced by a line of green vegetation along the whole length of the plain from the Oldtown site to the Florida Mountains.¹

The locality of emergence of the Mimbres from the hills or where its waters sink below the surface is characteristic. The place is surrounded by low hills forming on the south a precipitous cliff, eighty feet high, which the prehistoric inhabitants chose as a site of one of their villages; from the character and abundance of pottery found, there is every reason to suppose this was an important village.

The Oldtown ruin is one of the most extensive seen by the author during his reconnoissance in the Deming Valley, although not so large as some of those in the Upper Mimbres, or on Whiskey Creek, near Central. Although it is quite difficult to determine the details of the general plan, the outlines of former rectangular rooms are indicated by stone walls that may be fairly well traced. There seem to have been several clusters of rooms arranged in rows, separated by square or rectangular plazas, unconnected, often with circular depressions between them.

¹ A beautiful view of the valley can be obtained from the top of Black Mountain, above the small ruin at its base, that will be mentioned presently.

There is considerable evidence of "pottery hunting" by amateurs in the mounds of Oldtown, and it is said that several highly decorated food bowls adorned with zoic figures have been taken from the rooms. It appears that the ancient inhabitants here, as elsewhere, practised house burial and that they deposited their dead in the contracted position, placing bowls over the crania (fig. 1).¹

The author excavated several buried skeletons from a rectangular area situated about the middle of the Oldtown ruin, surrounded on three sides by walls. The majority of the dead were accompanied



FIG. 1.—Urn burial. (Schematic.)

with shell beads and a few turquoise ornaments, and on one was found a number of shell tinklers made of the spires of seashells. One of the skeletons excavated by Mr. Osborn appeared to have been enclosed in a stone cist with a flat slab of stone covering the skull. The remains of a corner post supporting the building stood upright on this slab.² In another case a skull was found broken into fragments by the large stone that had covered it. Several skeletons had no bowls

¹ The drawings of pottery designs in this article were made by Mrs. M. W. Gill; the stone and other objects were drawn by Mr. R. Weber.

² A significant feature in the Mimbres form of "urn burial" is the invariable puncturing of the bowl inverted over the head. The ancient Peruvians in some instances appear to have "killed" their mortuary bowls, and life figures depicted on Peruvian pottery are sometimes arranged in pairs as in the Mimbres.

over the heads, an exceptional feature in Mimbres burials; and in some instances the bowl had been placed over the face. In the case of numerous infant interments the bowl covered the whole skeleton.

RUIN ON BYRON RANCH

This ruin lies not far from the present course of the Mimbres near the Little Florida Mountains. The place has long been known as an aboriginal village site and considered one of the most important in the valley. The remains of buildings cover a considerable area. They have a rudely quadrangular form, showing here and there depressions and lines of stones, evidently indicating foundations of rooms, slightly protruding from the ground. Although this ruin has been extensively dug over by those in search of relics, no systematic excavations seem to have been attempted. It is said that valuable specimens have been obtained here, and fragments of pottery, arrowheads, and broken stone implements are still picked up on the surface.

The important discovery of burial customs of the ancient Mimbrenos was made by Mr. Duff at this ruin. He excavated below the floor of one of the rooms and found a human cranium on which was inverted a food bowl pierced in the middle, the first example of this custom noted in the Mimbres region.

RUIN NEAR DEMING

About seven miles northwest of Deming, in a field on the north side of the Southern Pacific Railroad, there is a small tract of land

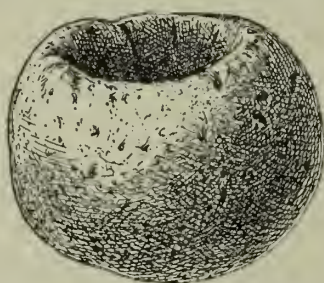


FIG. 2.—Paint mortar. Diam. $2\frac{1}{2}$ ".

showing aboriginal artifacts strewn over the surface, affording good evidence of prehistoric occupation. There are no house walls visible at this place, and only a few fragments of food bowls, but in the course of an hour's search several small mortars (fig. 2), paint grinders and other objects were procured at this place.¹

¹ Although not placed in the proper locality on his map, this ruin seems to be one of the "pueblos" (Nos. 162-164) mentioned by Dr. Hough.

PREHISTORIC SITE NEAR BLACK MOUNTAIN

Walls and outlines of rooms indicated by rows of stones mark remains of a prehistoric settlement at the base of Black Mountain, eight or nine miles northwest from Deming. Here occur many fragments of pottery, broken metates, and manos, and other indications of occupation by man. On top of Black Mountain there are rude cairns or rings of stones apparently placed there by human hands.

The fragments of pottery taken from the ruin at the base of Black Mountain are very different from those from Oldtown and other typical Mimbres ruins. Its color on the outside is red, with a white interior surface decorated with black geometric designs, the border is flaring often with exceptional exterior decoration. These bowls have broken encircling lines—a feature yet to be found in other Mimbres pottery—and none of the few pieces yet obtained from the ruin near Black Mountain has animal pictures. The whole appearance of this pottery recalls old Gila ware and suggests an intrusion from without the Mimbres region, possibly from the north and west.

The circles of stones on the top of Black Mountain have many points of resemblance to similar structures on hilltops near Swarts' Ranch on the Upper Mimbres, described by Mr. Webster, as follows:¹

The tops of nearly all the mountains of this valley, and particularly those here mapped, are occupied by hundreds of rock mounds, breastworks, pits, etc. The region shown in plate 3, and which represents an area about one mile in length and three-fourths mile in width, exhibits 240 of these structures. . . . These rock mounds are composed of more or less rounded rocks gathered from the region, and generally weighing from four to eight pounds each; although many are smaller: and again others weigh from twenty-five to fifty pounds or more each. These structures are generally circular: although at times they are ovate, and again assume an oblong or linear marginal outline. They vary considerably in size, although usually being only from three to four feet in diameter: the linear ones being from six to eight feet or more in length. Some of the larger circular mounds assume a diameter of seven to eight feet. The height of these mounds varies considerably; but as a rule assume a height ranging from one to one and a half feet.

The distance apart of these structures is variable; being as a general thing from five to fifteen feet; but not infrequently they are only two to four feet apart: at other times, however, they may be observed to be from sixty to ninety feet or more distant from each other.

¹ Archæological and Ethnological Researches in Southwestern New Mexico, Part 2, Ruin, Ancient Work Shop, Rock Mounds, etc., at Swarts' Ranch. (The Archæological Bulletin, vol. 4, No. 1, p. 14, 1913.)

Mr. Webster discovered on a rocky ridge near Swarts' ruin, somewhat higher on the Mimbres than Brockman's Mill, seven similar earthen pits of much interest, which remind the author of subterranean or half-sunken dwellings. They are saucer-shaped or linear depressions, averaging about two feet in depth; when circular they are from five to fifteen feet in diameter the linear form in one instance being fifty feet long. Some of these have elevated margins, others with scarcely any marginal ridge. The western margin in one instance has a "wall of rounded stones."

There are similar saucer-shaped depressions near Brockman's Mills and elsewhere in the Mimbres, almost identical with "pit dwellings" found by Dr. Hough near Los Lentos. These saucer-like depressions, often supposed to have been the pits from which adobe was dug, were also places of burial, the dead being presumably interred under or on the floors; the original excavation being a dwelling that was afterwards used as a burial place for the dead. Their form suggests the circular kiva of the Pueblos and has been so interpreted by some persons.

RUINS ON THE MIMBRES RIVER FROM OLDTOWN TO BROCKMAN'S MILLS

On low terraces elevated somewhat above the banks of the river, between Oldtown and Brockman's Mills, there are several village sites, especially on the western side.¹ The most important of these is situated about four miles north of Oldtown. The ruin at the Allison Ranch, situated at the Point of Rocks where the cliffs come down to the river banks, is large and there are many pictographs nearby. The ruins at Brockman's Mills on the opposite or eastern side of the river lie near the ranch-house. Many rooms, some of which seem to have walls well plastered, can be seen just behind the corral. North of the ruin is a hill with low lines of walls like trincheras. On some of the stones composing these walls and on neighboring scattered boulders, there are well-made pictographs.²

PICTOGRAPHS

Pictographs occur at several localities along the Mimbres. As these have a general likeness to each other and differ from those of other regions, they are supposed to be characteristic of the prehistoric

¹ For a description of ruins at Swarts' and Brockman's Mills see C. L. Webster, *Archæological and Ethnological Researches in Southwestern New Mexico*. (The *Archæological Bulletin*, vol. 3, No. 4.)

² It is said that a Spanish bell in the Chamber of Commerce at Deming, was dug up on this ranch near the ruin. This bell might indicate an old mission at this place.

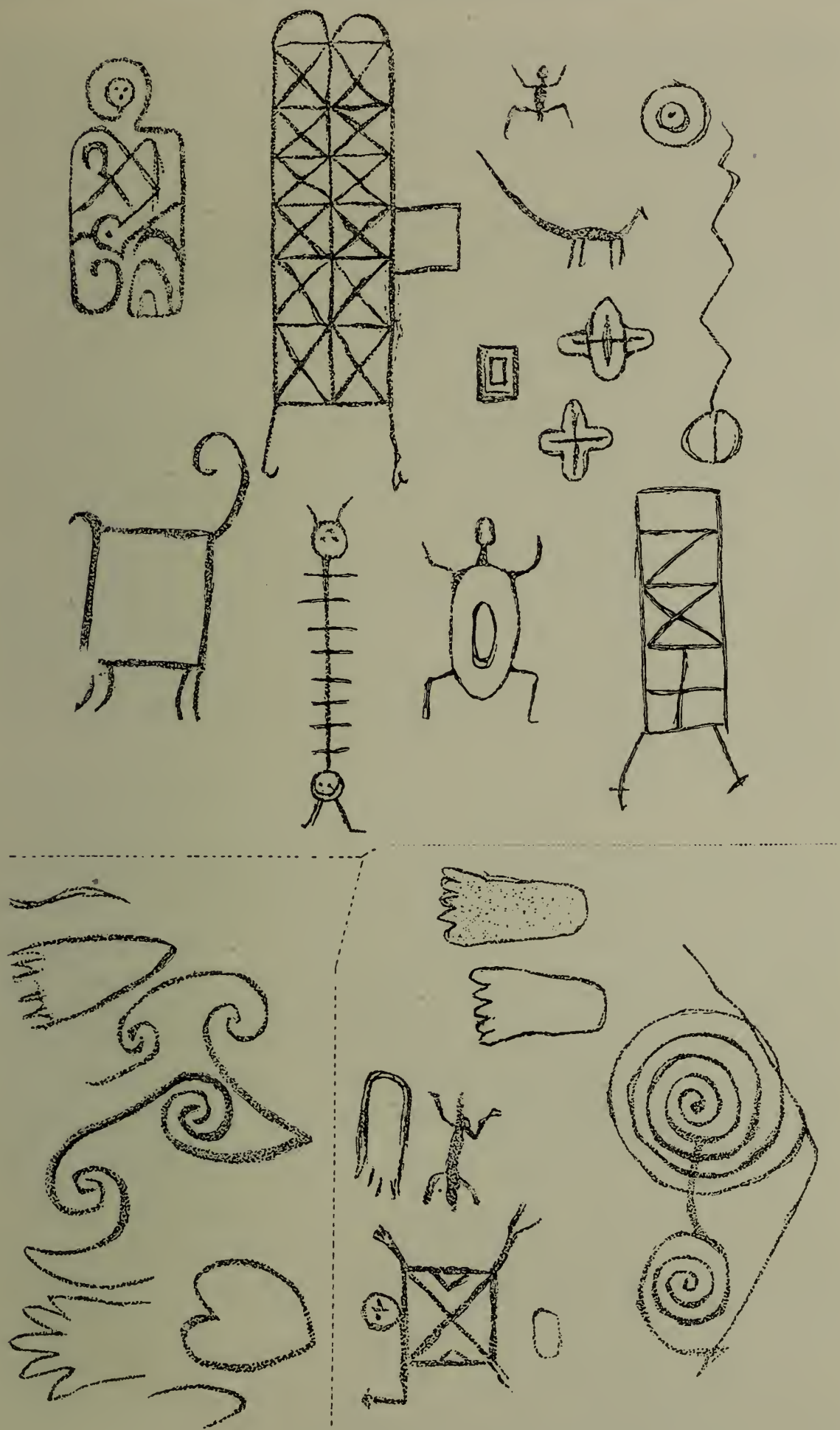


FIG. 3.—Pictographs.

people. They are generally pecked on the sides of boulders or on the face of the cliffs in the neighborhood of prehistoric sites of dwellings. Although there is only a remote likeness between these pictographs and figures on pottery, several animal forms are common to the two.

The most important group of pictographs (fig. 3) seen by the author are situated about nine miles from Deming in the western foot-hills of Cook's Peak.¹ Some of the pictographs recall decorations on bowls from Pajarito Park.

Another large collection of Mimbres pictographs, visited by the author, is found at Rock Canyon, three or four miles above Oldtown, at a point where the cliffs approach the western bank of the river. On the river terrace not far above this collection of pictures, also on the right bank of the river, lies the extensive ruin of a prehistoric settlement, the walls of which project slightly above the surface. This ruin has been dug into at several points revealing several fine pieces of pottery, fragments of metates, and other implements, which are said to have been found in the rooms. A mile down the valley overlooking the river there is another cluster of pictures at a ruin called "Indian graveyard," probably because human skeletons have been dug out of the floors of rooms.

MORTARS IN ROCK IN PLACE

One of the characteristic features of the Mimbres ruins, but not peculiar to them, are mortars or circular depressions worn in the horizontal surface of rock in place. They are commonly supposed to have been used as mortars for pounding corn, and vary in size from two inches to a foot in diameter, being generally a foot deep. We find them occurring alone or in clusters. Good examples of such depressions are found near the Byron ruin, in the neighborhood of the ruins along Whiskey Creek, at Oldtown, and elsewhere. There is a fine cluster of these mortars nine miles from Deming, near the pictographs in the Cook's Range. Similar mortars have been repeatedly described and often figured. Mr. Webster has given the most complete account of this type of mortars in a description of the ancient ruins near Cook's Peak.² On the surface of the southwestern

¹ The author visited these rocks in company with Dr. Swope, who has known of them for many years.

² *Archæological and Ethnological Researches in Southwestern New Mexico*, Part 4. (*The Archæological Bulletin*, vol. 5, No. 2, p. 21.)

point of a low hill to the north of an ancient ruin at Cook's Peak, according to this observer,

occurs a feature which the writer had nowhere else seen, save on the east side of the same mountain. I refer to the great number of mortars which occur in this sandstone back a few feet to the north of the ruins, and which were made and long used by the ancient pueblo-dwellers. There exists at this one place fifty-three of these mortars, nearly all of them occurring in an area of surface not more than seventy-five or eighty feet in diameter. . . . Nearly all the mortars are circular or sub-circular in outline, symmetrical and smooth inside, and the upper edge or margin usually rounded by the pestle. In a few cases, however, these mortars have an oblong or subovate outline, somewhat like some forms of metates found among the ruins.

These mortars often contract to a point at the bottom, when circular in marginal outline, although at times are longer than broad, as just stated, and in this case have a more flattened bottom. They vary from two to eleven inches in diameter, the smallest forms being those apparently only just begun, and are few in number. The deepest mortar observed was seventeen inches, though the great majority of them would vary perhaps from four to ten inches in depth. Often the rock was smooth and polished around the margin of the mortars, and [their distances apart] vary from a few inches to several feet from each other.

At times these mortars would be located on the top of a large block of sandstone which might happen to occupy this area; these boulders sometimes being four to five feet in diameter and perhaps four feet in height. It was plain to be seen that this ancient mill-site was long used by these peculiar people, but just why so many quite similar mortars should have been made here and used by these people is a matter of conjecture.

It seems certain that a sufficiently large number of people could not have been congregated here, under ordinary conditions, to warrant the forming of so many mortars for the purpose of grinding food.¹

The present writer accepts the theory that these rock depressions were used in pounding corn or other seeds, but their great number in localities where ruins are insignificant or wanting is suggestive. We constantly find arable land near them, indicating that communal grinding may have been practised, and suggesting a large population living in their immediate neighborhood, which may have left no other sign of their presence.

MINOR ANTIQUITIES

The artifacts picked up on the surface near ruins or excavated from village sites resemble so closely those from other regions of the Southwest that taken alone these do not necessarily indicate special

¹ Mr. Webster describes "ancient pueblos" on the western side of this group of mountains as well as on the eastern slope of Cook's Range. Certain cave lodges, or walled caves, in a wild canyon on the east side of Cook's Peak are supposed by him to be the recent work of Apaches.

culture areas. A few of the more common forms from the Mimbres are here figured for comparison, but, with the exception of the pottery, there is little individuality shown in the majority of these objects. Among other objects may be mentioned stone implements, mortars, idols, bone implements, shell ornaments, and pottery.

STONE IMPLEMENTS

The stone axes are not very different from those of the Rio Grande and the Gila, but it is to be noticed that they are not so numerous as in

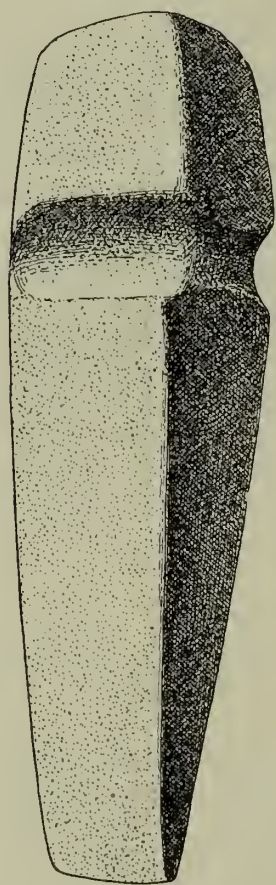


FIG. 4.—Stone axe.
Length $8\frac{3}{4}$ ".

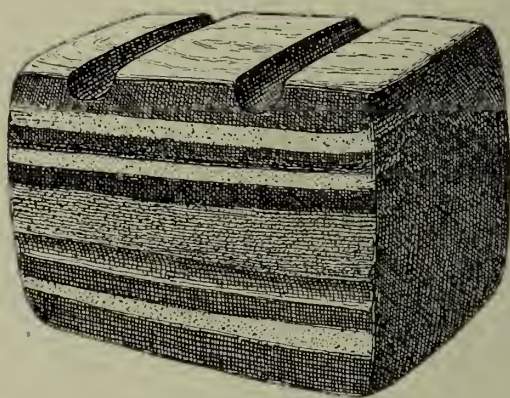


FIG. 5.—Arrow polisher. Length $3\frac{1}{4}$ ",
breadth $2\frac{1}{2}$ ".

the latter region, and are probably inferior in workmanship, fine specimens indeed being rare. The majority of the axes (fig. 4) are single grooved, but a few have two grooves. In Dr. Swope's collection, now in the Deming High School, there is a fairly good double-bladed axe.

Miss Alnutt, of Deming, has a remarkable collection of arrow-points gathered from many localities in the valley, and also a few fine spearpoints, conical pipes, and other objects taken from the sacred spring at Faywood Hot Spring. A beautiful arrow polisher found near Denning is shown in figure 5.

The pipes from the Mimbres take the form of tubular cloud-blowers, specimens of which are shown in figure 6. Apparently these pipes were sometimes thrown into sacred springs, but others have been picked up on the surface of village sites or a few feet below the surface.

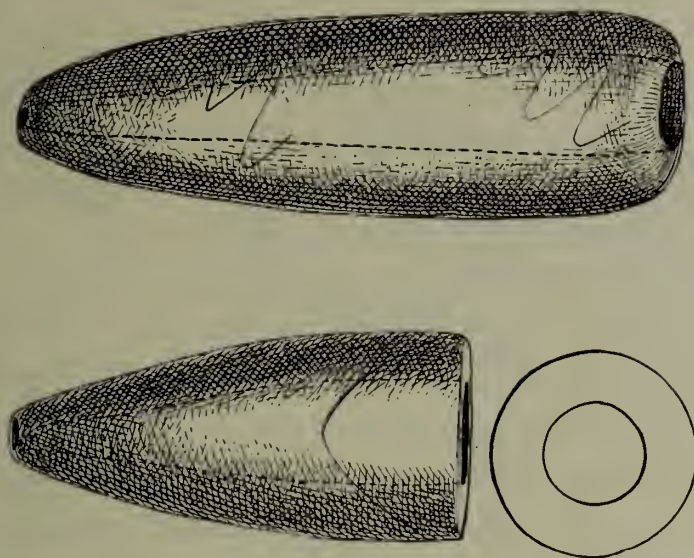


FIG. 6.—Cloud blowers. Faywood Hot Springs. (Swope collection.)
 $\frac{1}{2}$ nat. size.

Lateral and top views of one of the characteristic forms of small stone mortars with a handled projection on one side is shown in figure 7. This specimen is in the Swope collection in the Deming*

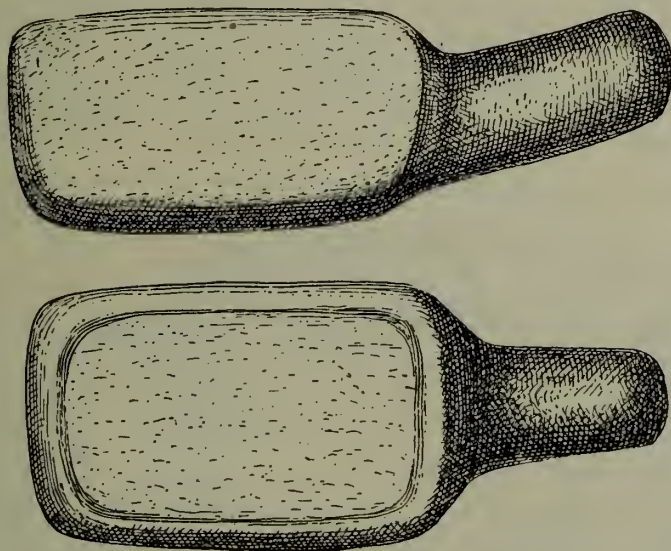


FIG. 7.—Handled mortar. (Swope collection.) Length $10\frac{3}{4}$ ".

High School. In the same collection there are also two beautiful tubular pipes, or cloud-blowers, from the same spring.

The stone mortars from Mimbres ruins vary in size. Many are simply spherical stones with a depression on one side; others are larger but still spherical, or ovate; while others have square or

rectangular forms. The most remarkable feature in these is the presence of a handle on one side, which occasionally is duplicated, and in one instance four knobs or legs project from the periphery. These projections appear to characterize the mortars of the Mimbres, although they are not confined to them, as the form occurs in other regions of New Mexico and in California. One of the most instructive of these small spherical paint mortars, now owned by Mr. E. D. Osborn, has ridges cut in high relief on the outside.

Metates and manos, some broken, others whole, are numerous and can be picked up on almost every prehistoric site. While some of these metates are deeply worn, showing long usage, others have margins but slightly raised above the surface. The majority of metates found on the sites of habitations have no legs, but a typical Mexican metate with three knobs in the form of legs was presented to the National Museum by the Rev. E. S. Morgan, of Deming. Metates are sometimes found in graves with skeletons, presumably those of women. Several ancient metates are now in use as household implements in Mexican dwellings.

If the size of the population were to be gauged by the number of mortars and manos found, certainly the abundance of these implements would show that many people once inhabited the plain through which flows the Mimbres River. Narrow, flat stone slabs have an incised margin on one end. Their use is problematical. The frequency of stone balls suggests games, but these may have been used as weapons; or again, they were possibly used in foot races, as by the Hopi of to-day.

COPPER OBJECTS

Native metallic copper was formerly abundant at the Santa Rita mines, and there is every probability that the material out of which some of the aboriginal copper bells were made was found here, and that these mines were the source of float copper found in Arizona ruins. Although no copper implements were found by the author in the Mimbres ruins, he has been told that objects of copper apparently made by the aborigines have been found in some of the graves.¹

¹ Elaborate metal objects of early historical times have been found at various places in the Mimbres. The best of these is a fragment of an elaborately decorated stirrup, now owned by Mr. Pryor of the Nan Ranch. A copper church bell was found near his house, and other metal objects belonging to the historic epoch are reported from various ruins in the valley.

STONE IDOLS

The author saw several stone idols that were reported to have been obtained from ruins in the Mimbres Valley. These idols represent frogs (fig. 8), bears, mountain lions, and other quadrupeds, and have much the same form as those from ancient ruins in Arizona.¹

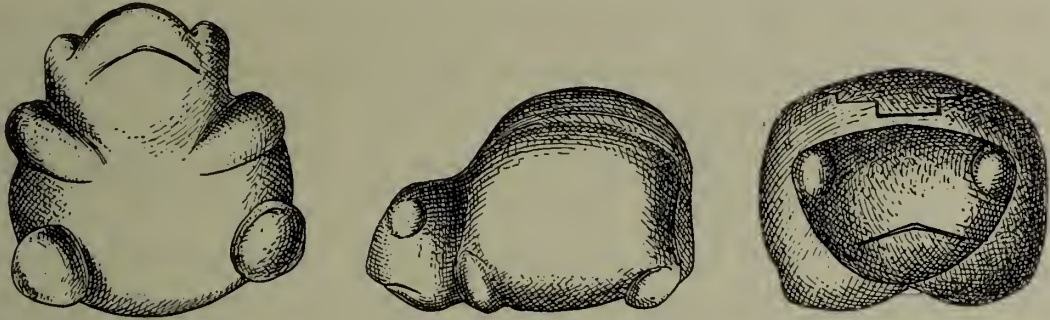


FIG. 8.—Frog fetish. Black Mountain Ruin. (Swope collection.) Length $3\frac{1}{2}$ ".

On the backs of several of these stone idols are incised figures, like arrowheads tied to Zuñi fetishes, or possibly rain-cloud figures. In one instance they were made on an elevated ridge, which unfortunately was broken. The author has also seen several small amulets,

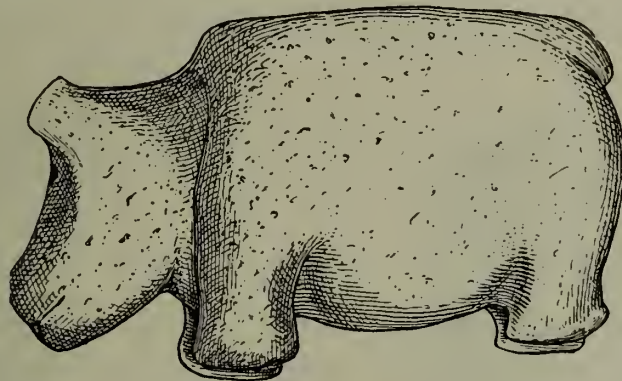


FIG. 9.—Fetish. Byron Ranch. (Swope collection.) Length $5\frac{3}{4}$ ".

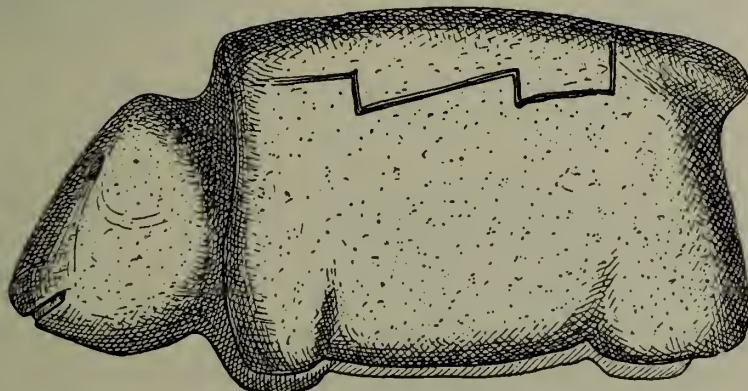


FIG. 10.—Fetish. Byron Ranch. (Swope collection.) Length $6\frac{3}{4}$ ".

perforated apparently for suspension. The stone idols here figured (figs. 8, 9, 10) were presented to the Deming High School by Dr. Swope.

¹ Similar stone idols from the San Pedro Valley and other localities, in Arizona and New Mexico, have mortar-like depressions on their backs.

SHELL BRACELETS AND CARVED SHELLS

Two or three shell bracelets were excavated from Mimbres ruins, and there were also found carved shells and tinklers not unlike those of northern New Mexico ruins. Some of these when excavated were found near the head and are supposed to have been earrings. Five shell rings were still on the bones of the forearm of a child when found. One of the shell bracelets owned by Mr. Osborn was cracked but was pierced on each side of the break, indicating where it had been mended; another had figures incised on its surface, and a third had the edges notched, imparting to it a zigzag shape, like that of a serpent. Many shell beads, spires of shells used for tinklers, and other shell objects, all made of genera peculiar to the Pacific Ocean, were found during the excavations.

POTTERY

FORMS AND COLORS

The comparatively large number of vases, food bowls, and other forms of decorated smooth ware in collections from the Mimbres is

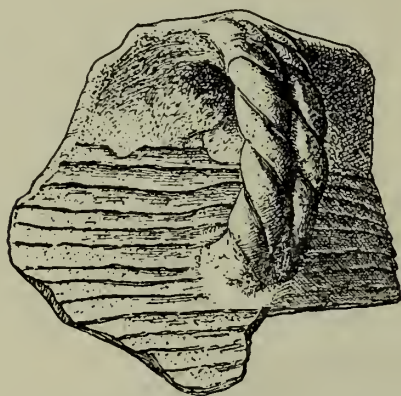


FIG. 11.—Braided handle.
 $\frac{1}{2}$ nat. size.



FIG. 12.—Small bowl.
Diam. $3\frac{1}{2}$ ".

largely due to their use in mortuary customs, and the fact that almost without exception they were found placed over the skulls of the dead. Although the largest number of vessels are food bowls, there are also cups with twisted handles (fig. 11), bowls (fig. 12), vases, dippers, and other ceramic forms found in pueblo ruins.¹

Coarse, undecorated vessels showing coils, indentations, superficial protuberances, and other rude decorations like those so well known in Southwestern ruins, are well represented. Some of these were

¹ One of the exceptional forms of pottery has a flat rectangular base, the four sides being formed by bending up segments of a circular disk (fig. 18).

used as cooking vessels, as shown by the soot still adhering to their outer surface. While the majority of bowls were broken in fragments when found, a few were simply pierced through the bottom; one or two were unbroken or simply notched at the edge.

The colors of Mimbres ware are uniform and often striking. There are good specimens of black and white ware; also red, black, and yellow with brown decorations are numerous. Some of the best pieces are colored a light orange. Many of the fragments are made of the finest paste identical in color and finish with ware from Casas Grandes, Chihuahua, which furnishes the best prehistoric pottery from the Southwest. No effigy jar, or animal formed vase, however, exists in any collections from the Mimbres examined by the author.

Ruins in the Lower Mimbres have thus far yielded a larger variety and a finer type of pottery than ruins on the banks of the river among the hills, which is in part due to the extent of excavations. The Old-town potters developed a kind of pottery with characteristic ornamentation found both in ruins in the plain to the south and along the narrow valley of the Mimbres to the north.

The Mimbres pottery, like all other ancient ware from the Southwest, frequently shows evidences of having been mended. Holes were drilled near the breaks and fibers formerly united the parts thus holding the bowl together even though broken. As one goes south, following the course of the river, the character of the pottery changes very slightly, but if anything is a little better.

The food bowls generally have a rounded base, but one specimen is flat on the bottom. The edges of the bowls from the ruin at Black Mountain are curved outward, an exceptional feature in ancient Pueblo vessels but common in modern forms.

PICTURES ON MIMBRES POTTERY

The great value of the ceramic collection obtained from the Mimbres is the large number of figures representing men, animals, and characteristic geometrical designs, often highly conventionalized, depicted on their interiors. These figures sometimes cover a greater part of the inner surface, are often duplicated, and are commonly surrounded by geometrical designs or simple lines parallel with the outer rim of the vessel. It is important to notice the graceful way in which geometrical figures with which the ancient potters decorated their bowls are made to grade into the bodies of animals, as when animal figures become highly conventionalized into geometrical designs. Although these decorations are, as a rule, inferior to

those of the Hopi ruin, Sikyatki, the figures of animals are more numerous, varied, and realistic.

The ancients represented on their food bowls men engaged in various occupations, such as hunting or ceremonial dances, and in that way have bequeathed to us a knowledge of their dress, their way of arranging their hair, weapons, and other objects adopted on such occasions. They have figured many animals accompanied by conventional figures which have an intimate relation to their cults and their social organization. Although limited in amount and imperfect in its teaching this material is most instructive.



FIG. 13.—Hunters. Oldtown Ruin. (Osborn collection.)

GROUP OF HUNTERS

An instructive group of human figures is drawn on a deep red and white food bowl (fig. 13), which measures ten inches in diameter. It is evident that this design represents three hunters following the trail of a horned animal, probably a deer. This trail is represented on the surface of the bowl by a row of triangles, while the footprints of the hunters extend along its side. It may be noted that although there are three hunters, the trails of two only are represented, and that the hunters are barefoot. They have perhaps lost the trail and

are looking the opposite way, while the animal has turned back on his path. The footprints of the deer in advance of the hunters are tortuous, showing want of decision on the part of the animal. The three hunters are dressed alike, wearing the close-fitting jacket probably made of strips of skin woven together like that found by Dr. Hough in a sacrificial cave at the head of the Tulerosa, New Mexico. Each carries a bow and arrow in his right hand, and in his left a stick which the leader uses as a cane; the second hunter holds it by one end before him, and the third raises it aloft. These objects are supposed to represent either weapons or certain problematic wooden staffs with feathers attached, like divining rods, by which the hunters are in a magical way directed in their search. The first hunter "feels" for the lost trail by means of this rod.

An examination of the pictures of the arrows these hunters carry shows that each has a triangular appendage at the end representing feathers, and small objects, also feathers, tied to its very extremity. The hair of the third hunter appears to be a single coil hanging down the back, but in the other two it is tied in a cue at the back of the head. The eyes are drawn like the eyes on Egyptian paintings, that is, the eye as it appears in a front view is shown on the side of the head. The right shoulders of all are thrown out of position, in this feature recalling primitive perspective. The information conveyed by this prehistoric picture conforms with what is known from historical sources that the Mimbres Valley formerly abounded in antelopes, and we have here a representation of an aboriginal hunt.

FIGURE OF A WOMAN

A black and white bowl (pl. 1, fig. 1) is twelve and one-half inches in diameter and six inches deep. Upon this bowl is drawn a figure of a human being, probably a woman or a girl, seen from the front. Although portions of the figure are not very legible, such details as can be made out show a person wearing a blanket that extends almost to the knees leaving arms and legs bare, the lower limbs being covered. The head is square, as if masked, with hair tied at each lower corner. Although these appendages may be meant to represent ear-pendants, it is more likely that they are whorls of hair, as is still customary in Pueblo ceremonies in personations of certain maidens. Across the forehead are alternating black and white square figures arranged in two series, recalling corn or rain-cloud symbols. The neck is adorned by several strands of necklaces, the outermost of which, almost effaced, suggests rectangular ornaments. The garment worn by the

figure is evidently the ceremonial¹ blanket of a Pueblo woman, for no man wears this kind of garment. It has a white border and from its middle there hangs a number of parallel lines representing cords or a fringe, evidently the ends of a sash by which the blanket was formerly tied about the waist. It is instructive to notice that we find similar parallel lines represented in a picture of a girl from Sikyatki² where the blanket has the same rectangular form as in the prehistoric Mimbres picture. There can be no question that in this case it represents a garment bound with a girdle, or that the picture was intended for that of a girl or a woman. We have in this picture evidence that the same method of arranging the hair was used in the Mimbres Valley as in northern New Mexico. The leg wrappings suggest those used by Pueblo women, especially the Hopi, whose leggings are made of long strips of buckskin attached to the moccasins and wound around the lower limbs.

PRIEST SMOKING

The third human figure, found on a black and white bowl from a Mimbres ruin, is duplicated by another of the same general character depicted on the opposite side of the bowl. These figures (fig. 14) are evidently naked men with bands of white across the faces. The eyes are represented in the Egyptian fashion. In one hand each figure holds a tube, evidently a cloud-blower or a pipe, with feathers attached to one extremity, and in the other hand each carries a triangular object resembling a Hopi rattle or tinkler. The posture of these figures suggest sitting or squatting, but the objects in the extended left hand would indicate dancing. The figure is identified as a man performing a ceremonial smoke which accompanies ceremonial rites.

MAN WITH CURVED STICK

One of the most instructive food bowls found at Oldtown, now owned by Mr. Osborn, has on it a picture of two hunters, one on each side of an animal (fig. 15). One of these hunters carries in his hand a stick crooked at the end, its form suggesting a throwing stick.³ Both hunters have laid aside their quivers, bows, and arrows, which are shown behind them. The picture of an animal between them has been so mutilated by "killing" or breaking the bowl that it is impos-

¹ Called also a "wedding blanket" since it is presented to a girl on marriage by her husband's family.

² 17th Ann. Rep. Bur. Amer. Ethnol., pl. 129, fig. *a*.

³ The hand of the hunter pictured on a bowl already described (fig. 13), also carried a curved stick.



FIG. 14.—Priest smoking. Osborn Ruin.



FIG. 15.—Man with curved stick. Oldtown Ruin. (Osborn collection.)
Diam. $5\frac{1}{2}$ ".

sible to identify it. From the end of this crook to the body of the animal there extend two parallel lines of dots indicating the pathway of a discharged weapon. Near the body of the animal these rows of dots take a new direction, as if the weapon had bounded away or changed its course. The rows of dots are supposed to represent lines of meal by which Pueblos are accustomed to symbolically indicate trails or "roads."

There is, of course, some doubt as to the correct identification of the crooked staff as a throwing stick, for as yet no throwing stick has been found in the Mimbres ruins. The resemblance of the crooked stick to those on certain Hopi altars and its resemblance to emblems of weapons carried by warrior societies is noteworthy. Crooked sticks of this character have been found in caves in the region north of the Mimbres.¹

We find a survival of a similar crook used as sacred paraphernalia in several of the Hopi ceremonies, where they play an important rôle. As the author has pointed out, crooked sticks or gnelas (fig. 16) identified as ancient weapons surround the sand picture of the Antelope altar in the Snake Dance at Walpi, and in Snake altars of other Hopi pueblos, but it is in the Winter Solstice Ceremony, or the Soyaluña, at the East Mesa of the Hopi, that we find special prominence given to this warrior emblem. During this elaborate festival every Walpi and Sitcomovi kiva regards one of these gnelas as especially efficacious for the warriors, and it is installed in a prominent place on the kiva floor, as indicated in the author's account of that ceremony.²

The following explanation of these crooks was given him by the priests:

These crooks or gnelas have been called warrior prayer sticks, and are symbols of ancient weapons. In many folk tales it is stated that warriors overcame their foes by the use of gnelas which would indicate that they had something to do with ancient war implements. Their association with arrows on the Antelope altars adds weight to this conclusion.

The picture from Oldtown ruin of the hunter who has laid aside the quiver, bow, and arrow, and is using a similar gnela,³ corroborates this interpretation.

Not all crooked sticks used by the Hopi are prayer sticks, or weapons, for sometimes in Hopi ceremonials a number of small shells are

¹ Bull. 87, U. S. National Museum.

² The Winter Solstice Ceremony at Walpi. Amer. Anthropol., 1st ser., vol. 11, Nos. 3, 4, pp. 65-87, 101-115.

³ An ancient crook found in a cave near Silver City is figured by Dr. Hough. Bull. 87, U. S. National Museum.

tied to the extremity of a crooked stick forming a kind of rattle. In the Flute Ceremony a crooked stick is said to be used to draw down the clouds when the rain they contain is much desired.

Figure 16 is a representation of one of the crooks which was specially made for use in the Soyaluña at Walpi, in 1900. Similar crooks were set upright in a low mound of sand on the floors of all the kivas. Extending from the base of the crook to the ladder there

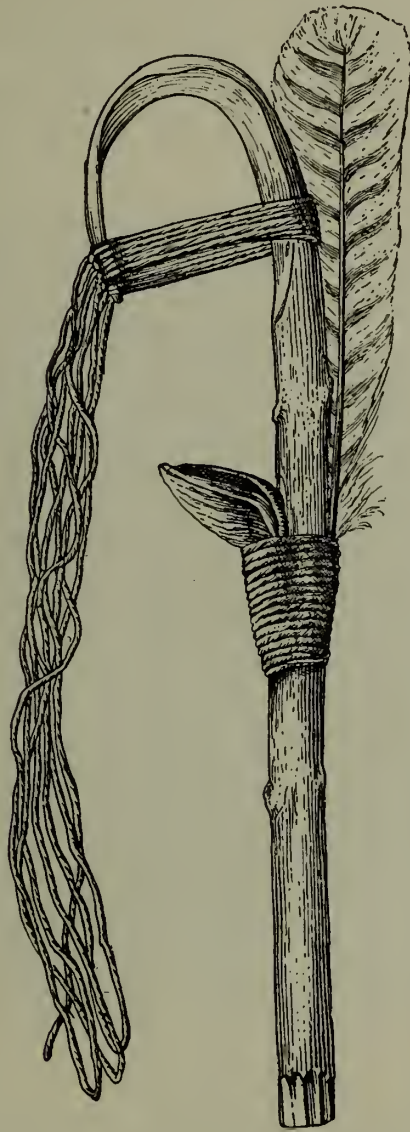


FIG. 16.—Hopi curved stick. Length 8".

was sprinkled a line of meal called the road (of blessings), over which was stretched a feathered string attached to the end of the crook. Midway in the length of the crook was attached a packet of prayer meal wrapped in cornhusk and a feather of the hawk, a bird dear to warriors, and other objects, which indicated a prayer offering. At the termination of ceremonies in which these crooks are made and blessed as prayer emblems by the Hopi they are deposited in shrines as recorded.

The crook (gnela) is used as a prayer emblem of warriors because it has the form of an ancient weapon, and while it assumes modifications in different Hopi ceremonies it apparently has one and the same intent, as in Soyaluña. This crook is sometimes interpreted as symbolically representing an old man with head bent over by age, but this interpretation is probably secondary to that suggested above, as so often happens in the interpretations given by primitive priests.

The true interpretation of the crooked prayer stick was pointed out by the author in his article on "Minor Hopi Festivals,"¹ as follows:

This crook is believed by the author to be a diminutive representation of an implement akin to a throwing stick, the object of which is to increase the



FIG. 17.—Human figure running. Oldtown Ruin. (Osborn collection.)
Diam. $7\frac{1}{2}$ ".

velocity of a shaft thrown in the air. Its prototype is repeatedly used in Hopi rites, and it occurs among Hopi paraphernalia always apparently with the same or nearly the same meaning.

In figure 17 is represented a person running with outstretched banded arms, holding in the left hand a bow, and in the other a straight stick. The head is circular with cross lines, a round, dotted eye, and two triangular ears. Another representation shows a human figure with a bow and arrow before the hands, accompanied by three animals, the middle one being a bird and the two lateral, quadrupeds.

¹ Amer. Anthropol., n. s., vol. 4, p. 502.

By far the most unusual group of human forms consists of two figures, one male, the other female, depicted on another bowl. The action in which these two are engaged is evident. The female figure has dependent breasts and wears a girdle. One hand is raised and brought to the face and the other carries a triangular object. The female figure has three parallel marks on the cheek, like the Hopi war-god. Behind the woman are several curved lines depicting unidentified objects.

The figure shown on one bowl (fig. 18) has several marked features, but the author is unable to suggest any theory of identification. It seems to be a seated figure with a human head, arms, and legs, the toes and fingers being like hands and feet. The forearm is drawn on the shoulder in the same way as in the one of the hunters (fig. 13).



FIG. 18.—Unidentified animal and bowl of unusual form. Oldtown Ruin. (Osborn collection.)

The eye, nose, and mouth are also human, but the body is more like that of an animal. The appendages back of the head are similar to those interpreted as feathers on the heads of certain animal designs.

On the theory that this is a seated human figure it is interesting to speculate on the meaning of the curved object represented on the surface of the bowl, extending from one hand to the foot. This object has the general form of a rabbit stick or boomerang, still used by the Hopi in rabbit hunting.¹

¹ Rabbits are abundant in the Mimbres Valley and several well-drawn pictures of this animal are found on the pottery.

The well-drawn figure painted on a bowl (pl. 1, fig. 2) from Oldtown ruin represents a man with knees extended and arms raised as if dancing. This picture has characteristic markings on the face, but otherwise is not distinctive.

QUADRUPEDS

Wolf.—Although there are not sufficiently characteristic features represented in the next figure (pl. 2, fig. 1) ¹ to identify it satisfactorily, the form of the head, tail, mouth, and ears suggests a wolf.² The square design ³ covering one side of the body seems to the



FIG. 19.—Antelope. (Osborn collection.) Diam. 10".

author not to belong to the animal itself, for an Indian who could represent an animal as faithfully as those here pictured would not place on it such markings unless for a purpose. It resembles the small blankets sometimes worn by pet dogs or horses among white people, which is a lame explanation, as dog and horse blankets were

¹ This picture resembles that of a wolf depicted on the east wall of the warrior chamber at Walpi. See Amer. Anthropol. n. s., vol. 4, pl. 22.

² Pictures of the mountain lion by Pueblo artists, at least among the Hopi, have the tail turned over the back. The animal on the Mimbres bowl having no horns is not a horned deer or antelope.

³ The decoration of the bodies of animals with rectangular figures is a common feature in Mimbres pottery, as will be seen in pictures of birds soon to be considered.

unknown among Indians. The only theory the author has formed regarding this geometrical figure is that it is a variant of the Sikyatki habit of accompanying a figure of an animal with a representation of his shrine. This bowl is of black and white ware and is eleven inches in diameter by five and one-half inches deep.

Antelope.—There are two¹ figures of an animal with branching horns,² supposed to be an antelope, an animal formerly common in Mimbres Valley. In one of these (fig. 19) the head is held downward as if the animal were feeding; in the other (fig. 20) the neck is



FIG. 20.—Antelope. Osborn Ruin. Diam. 10".

extended. A pair of markings on the neck are identical with those on pictures of the antelope still painted on modern pottery made by the Zuñi. A band, resembling a checkerboard, is drawn across the body of one; on the other are parallel lines.

Another figure referred to as an antelope appears to represent a young fawn, since, while it has all the characteristics of this animal,

¹ In addition to the figure with the hunters which is probably a deer, as it has not the antelope marks on the neck.

² These horns are represented on a plane at right angles to that in which they naturally lie.

the horns are wanting. This specimen (fig. 21) was found at Oldtown. The rectangular shape so often given to the bodies of animals drawn on Mimbres pottery is well shown in this specimen.



FIG. 21.—Fawn. Oldtown Ruin.

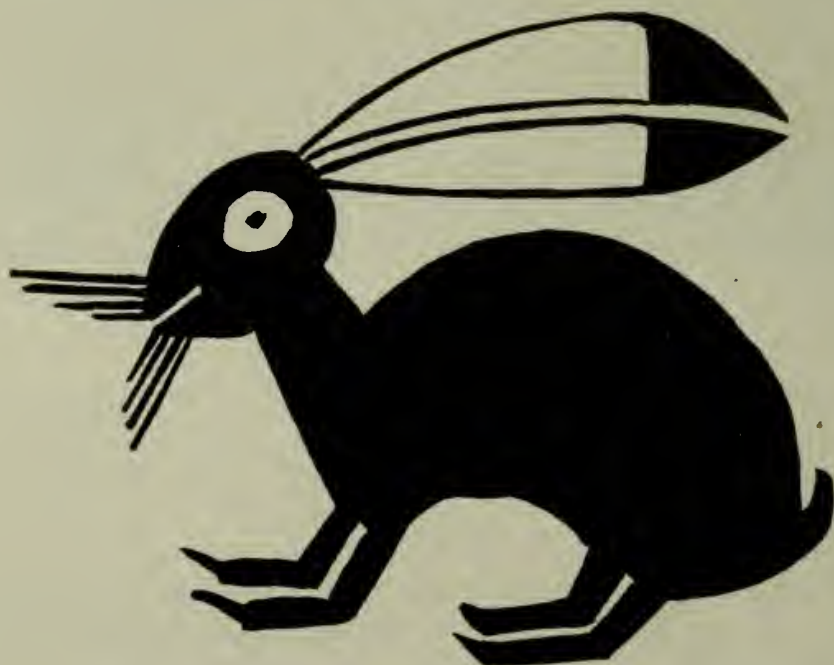


FIG. 22.—Rabbit. Oldtown Ruin. Diam. $7\frac{1}{2}$ ".

Mountain Sheep.—It is evident from the form of the unbranched horns, the slender legs, and the head, that either a mountain sheep or mountain goat was intended to be represented in plate 2, figure 2.

The markings on the body are symbolic, suggesting lightning, and it may be added that the Hopi depict the lightning on the artificial horns mounted on caps and worn by them in presentations of dances in which they personate mountain sheep.

Rabbit or Hare.—The pictured representation (fig. 31) of a quadruped whose hindlegs are larger than the forelegs and whose long backward extending ears are prominent features, probably represents a rabbit or a hare. The eyes recall figures of birds depicted on bowls from the Little Colorado ruins in Arizona, where eyes are

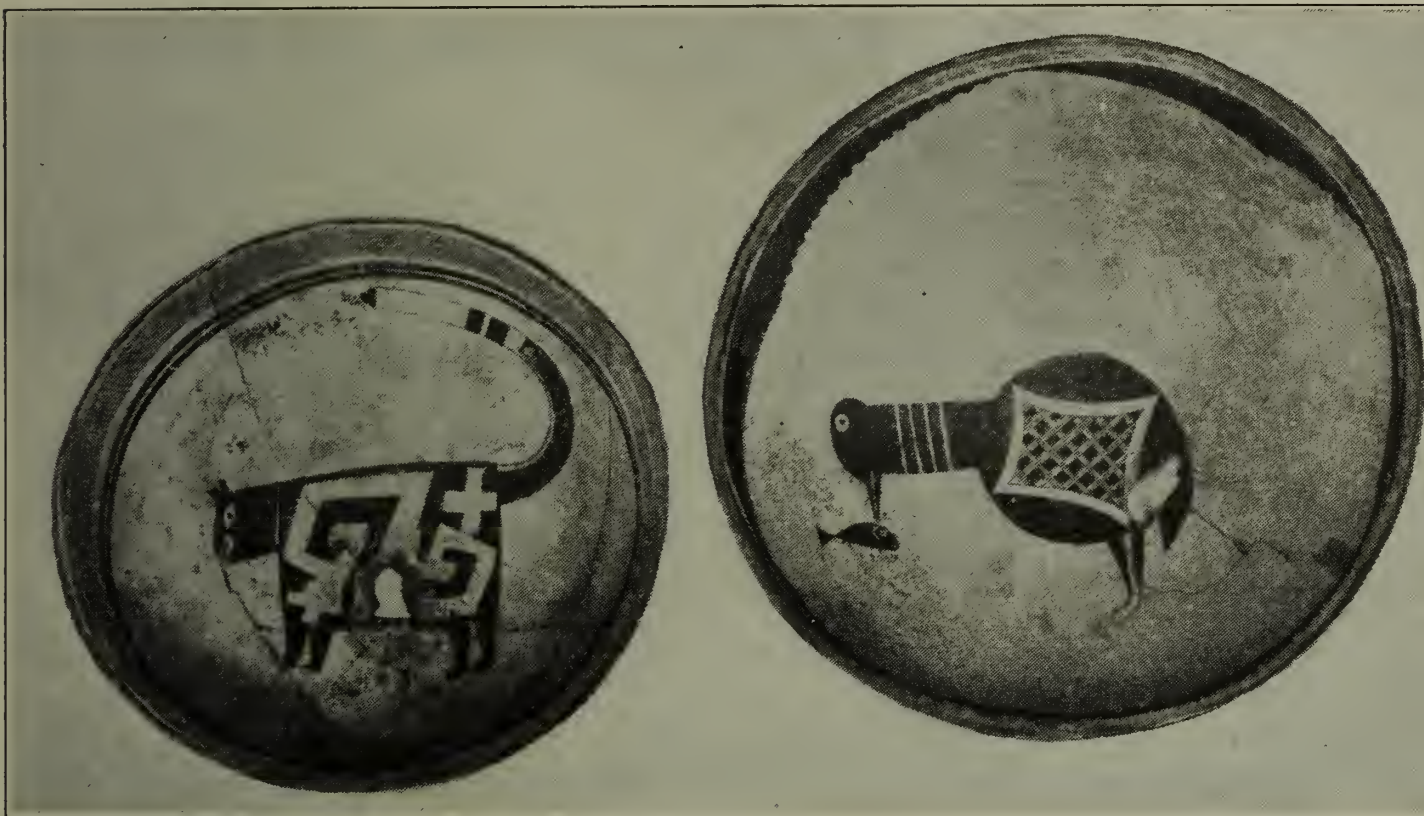


FIG. 23.—Mountain lion or wild cat.
(Osborn collection.)

FIG. 25.—Bird E. Osborn Ruin.
(Osborn collection.)

depicted on one side of the head in violation of a law of perspective in which only one eye can appear on a lateral view. The figure appears to have a tuft of grass in the mouth. The geometric markings on the body are different from those of any known species of rabbit and belong to the category of symbolic designs.

The author excavated at Oldtown a food bowl, the figure on which was undoubtedly intended for a rabbit (fig. 22). The head, ears, body, legs, and tail are well made, leaving no question of the intention of the artist; but if there were any doubt of the identification it is dispelled by the representation of the mouth, on which the sensitive hairs or bristles are represented.

Mountain Lion.—One of the Oldtown bowls is decorated with a representation of the wild cat or mountain lion, and is a fair example of archaic design (fig. 23). The feature that distinguished this quadruped is the position of the tail which, like those of Pueblo pictures of mountain lions or cats, is bent forward over the back.

Both head and body are rectangular and the legs are short and stumpy with sharp curved claws. The ears, mouth, and teeth have characteristic features of carnivora and the tail is banded, especially near the end.

The geometric design on the side of the body consists of an angular, S-shaped design with two equal armed stars, the latter associated with the mountain lion in Pueblo symbolism. The single figure drawn on this bowl occupied the middle of the interior, but in the next bowl this figure is duplicated.

The two figures on another bowl also represent some cat, or mountain lion, but the geometric figure on its body differs so much from the first specimen that it may belong to a different genus. The geometrical designs occur on both the anterior and posterior extremities of the rectangular body and consist of triangular figures with parallel lines and terraces recalling rain-clouds. This bowl is owned by Mr. E. D. Osborn, and was found at Oldtown. The decorations on the two quadrants alternating with the animal figures are bands from which other markings radiate to the side of the bowl.

Badger.—The quadruped drawn on the inside of a bowl found at Oldtown, and now owned by Mr. E. D. Osborn, has some resemblances to a badger, especially in the head, ears, teeth, and tail. The geometrical design on the body of this animal consists of an unequal sided rectangle enclosing four triangles with angles so approximated as to form an enclosed rectangle. The head has two bands extending longitudinally, apparently conventionalized markings characteristic of this animal, as they do not occur on deer, wildcats, or mountain sheep.

Birds.—As has been pointed out in the author's identifications¹ of designs on Sikyatki pottery, those representing birds are among the most abundant. The same holds also in the pottery from the Mimbres, where several figures identified as birds occur on food bowls. Two of these are duplicated on the same vessel, practically the same figure being repeated on opposite sides. In the latter case each member of the pair faces in an opposite direction or is represented as if moving with the middle of the bowl on the left.²

¹ 17th Ann. Rep. Bur. Amer. Ethnol., p. 682.

² This is known as the sinistral circuit and is regarded as beneficial in Hopi ceremonials.

The various birds differ considerably in their forms, organs, attitudes, and appendages. Two of the pictures seem to represent the same bird, but the others belong to different genera. There are one or two figures in which feathers can be distinguished, but as a rule they are fewer in number and the feathers less conventionalized than in Sikyatki pottery.

Pending the difficulty in identifying the various designs representing birds, they are designated by letters A, B, C, D, etc.

Bird A.—The figure shown in plate 3, figure 1, is represented by two designs, practically the same, repeated so far as appendages go, but quite different in the ornamentation of their bodies. One of these has the same geometrical figure on its body as on one of the quadruped pictures, the second has a different design. Both birds have wings outspread as if in flight, in which the feathers are well drawn in detail, especially the wing on the side turned toward the observer. That on the opposite side is simply uniformly black. The feathers of its companion on the other side of the bowl are indicated by parallel lines. The tail is long and forked at the extremity, suggesting a hawk, and is decorated for two-thirds of its length with cross-hatched and parallel lines. A triangular appendage arises from the under side of the tail at the point where the line decoration ends, forming an appendage which is likewise represented in the companion picture.

Bird B.—Bird B (pl. 3, fig. 2) is painted on the interior of a food bowl of black and white ware, ten inches in diameter by five inches deep. Its body is oval, the head erect and undecorated, and the tail twisted from a horizontal into a vertical plane as is customary in representation of lateral views of birds from Pueblo ruins. The geometric figure on the body is unfortunately somewhat obscured by the plaster used in mending, but several parallel bars that may represent feathers of the wings show through it, and a number of other designs or parallel lines are apparent. An appendage of triangular form hangs from the lower margin of the body and indicates the position of one leg; the other leg is missing.

Bird C.—Bird C, shown in plate 4, figure 1, occurs on a black and white bowl that measures ten inches in diameter, five and one-half inches in depth. The figure occupies the circular zone in the middle of the bowl and is enclosed by parallel lines which surround the bowl near the rim. The top of the head, which is globular, is white in color, the beak projecting and the eyes comparatively large. The body is likewise globular and is covered by a square geometrical design the details of which are considerably obscured by the hole in the middle of

the jar. A number of parallel lines of unequal length, turned downward, hang from the rear of the body and form the tail. The long legs suggest a wading bird, and the widely extended claws point to the same identification.

Bird D.—One of the most instructive figures of birds occurs on a bowl from Oldtown ruin. This bowl (fig. 24) is now owned by Mr. E. D. Osborn, by whom it was found. The bird depicted on it is seen from the back; its wings are drooping, and parallel lines indicate feathers. The legs, drawn backward, terminate in three toes, and the tail, slightly bent to one side, is composed of several feathers.

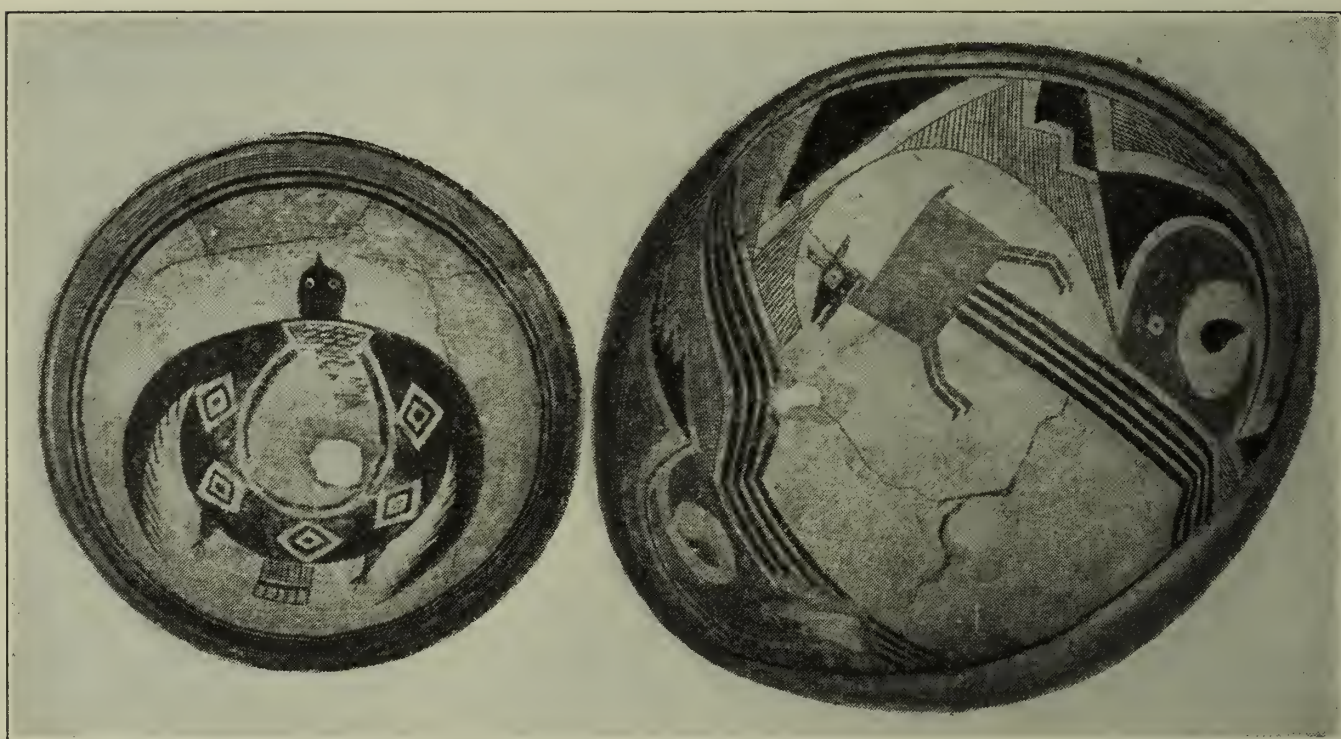


FIG. 24.—Bird D.
(Osborn collection.)

FIG. 29.—Unidentified animal. Oldtown Ruin.
(Osborn collection.)

The head is globular with two eyes on the back and a short pointed beak. As in all other zoic figures the geometric figures on the back of the body are the most characteristic. The middle of the body is occupied by an oval design through which may be seen the perforation with which the bowl was killed. At one end there is a triangular design with cross lines which extend partly over the oval figure where, except at one point, they are obscure.

Four quadrilateral designs are distributed at intervals around the oval figure. Each of these has sides of about equal length and a dot medially placed in a smaller figure contained in a larger.

Bird E.—The bird shown in figure 25 (p. 35) from the Osborn ruin has a body form not unlike that of plate 4, figure 1, but the geometric

design on the body, although rectangular, has incurved sides and is covered with cross lines suggesting a net. Its neck is girt by four rings, head small, without feathers, eye minute, bill comparatively long and pointed recalling that of a snipe which is also suggested by long legs and in a measure by the form of the tail.

This bird is undoubtedly aquatic, as indicated by the figure of a fish which it appears to be on the point of capturing or devouring.

Bird F.—The bird shown in plate 4, figure 2, is different from any of the above and is distinguished readily by the four curved lines on the head suggesting the quail. The pointed tail is marked above and below with dentations, formed by a series of rectangular figures which



FIG. 26.—Bird G. Oldtown Ruin. (Osborn collection.) Diam. 10".

diminish in size from body attachment to tip. The body itself is marked posteriorly with parallel lines, rectangular and curved figures suggesting wings.

The bowl (fig. 26) has three animals figured upon it forming a graceful combination. The most striking represents a long-billed bird with one wing notched on the inner margin. The tail of this bird is differently drawn from any of the other birds in the collection and has representations of six feathers. In front of this bird, with the point of the snout at the tip of the bill of the bird, is a lizard-shaped head covered with scales and two round eyes. The other remarkable figure also has extended forelegs, but the body is so broken that identification is quite impossible. Like the figure of the lizard, it also has a lozenge head and two eyes. The geometrical designs on the body are characteristic.

ANIMALS NOT IDENTIFIED

Unidentified Animal.—It is difficult to tell exactly what animal was intended to be represented by that shown in plate 5, figure 2. Its head and mouth are not those of any of the horned animals already considered, although it has some anatomical features recalling a mountain sheep. The extension back of the body has a remote likeness to a fish, but may be a bird or simply a conventional design. The geometrical figure covering the side of the body bears some likeness to one depicted on a bird, as shown in plate 3, figure 1. The same geometrical figure sometimes also occurs separated from any animal form in Sikyatki pottery.¹

The bowl is ten inches in diameter, five inches in depth, and the figures are painted red on a white ground.

Unidentified Animal.—One of the most remarkable of many figures on bowls from Oldtown in the collection of Mr. E. D. Osborn is shown in figures 27, 29 (p. 38). Three colors enter into the decoration of this bowl, black, white, and brown, and there are two types of ornamentation, one zoic, the other geometric. The bowl itself was much broken when found, but not so mutilated as to hide the main designs.

The zoic figures represent animals with square bodies, four legs, ears, head, and tail like a young antelope. There is no design on the side of the body, but in its place four broad parallel bands extend from the belly across the bowl. Each group of parallel lines changes its direction, widening in their course or near the ends where they enlarge for the accompanying figure. The markings on the necks of these figures suggest those on fawns.

The elaborate geometric figure composed of a scroll and comma-like dot and eye is a highly conventionalized symbol, possibly of some animal, as a bird's head, common on Casas Grandes pottery.

There is a bowl on exhibition in the Chamber of Commerce at Deming with a picture of a quadruped resembling a deer, but the base is so fractured in killing that it is difficult to determine the shape of the body or its decoration.

Unidentified Animal.—One of the most instructive figures of the collection appears in duplicate on a large food bowl (pl. 5, fig. 1). This vessel is black and white in color and measures fifteen inches in

¹ 17th Ann. Rep. Bur. Amer. Ethnol., pls. 121a, 138c. There are one or two examples of Sikyatki pottery where a geometrical design is attached to an animal figure which leads to the belief that possibly the figure attached to the rear of the above may not represent a part of another animal but rather a geometrical design of unknown significance, in this particular recalling old time Hopi ware.

diameter by six inches deep. The two designs occur on the two sides of the interior of the bowl, the middle of which is left without decoration.

The body of this creature is elongated and tapers backward, being continued into a tail like that of the lizard. The head is long and the snout pointed. Only two legs are represented, and these are situated far back on the body near the point of the origin of the tail from the body. A lozenge-shaped symbol forms the geometrical design on the side.



FIG. 27.—Unidentified animal. Oldtown Ruin. (Osborn collection.)

The presence of only two legs in this figure would seem to indicate that a bird was intended, but no bird has a tail like this figure; and the prehistoric potters of the Mimbres certainly knew how to draw a bird much better than this would imply. The exceptional features of this drawing, doubtless intentional, belong neither to flesh, fish, nor fowl, rendering its identification doubtful.

GRASSHOPPER¹.

A figure on a bowl here represented (pl. 6, fig. 1) is painted in "black or brown on a background of bluish wash over a yellow color."

¹ This figure may also be identified as a locust.

This bowl is eleven inches in diameter, five inches in depth. The figure is a remarkable one, having features of several animals, but none of these are more pronounced than its insectiform characters, among which may be mentioned the antennæ, three legs on one side (evidently three pairs of legs, for that in the back is simply introduced in violation of perspective), and an extended segmented abdomen attached to the thorax and terminating in a recurved tip. The character of the appendages to the thorax, or the wings, leaves no doubt that a flying animal was intended, and the legs and head being like an orthopterous insect, it may be provisionally identified as a "grasshopper."¹

While the general form of head, thorax, and body appear from an inspection of the figure, it may be well to call attention to certain special features that illustrate primitive methods of drawing. The most striking of these is seen in the abnormal position of the leg which arises from the thorax on the back in the rear of the so-called wings. This abnormal position was introduced by the artist to show the existence and form of the legs on the right side; the appendage corresponds with one of the three on the left side, which have the proper position but are much smaller. A similar delineation of organs out of place not seen or turned away from the observer was common among the prehistoric artists of the Pueblo region and is paralleled by the representation of two eyes on one side of the head already mentioned. The two "wings," each ending in white circles with dots or crosses, are supposed, on the theory that this is a grasshopper, to represent wing covers or elytra; which of course the prehistoric people of the Mimbres did not differentiate from folded wings. It is possible that wing cover and wing may be represented on one side and that corresponding organs on the right side of the body are omitted. The thorax is covered with regularly arranged rows of dots formed by parallel lines crossing at an angle, forming purely arbitrary decoration representing the geometric designs on the bodies of other animals.

FROGS AND BIRDS

One of the few bowls obtained on which animals of two species were depicted on the same vessel was excavated by the author at Oldtown. This remarkably fine specimen (pl. 7, fig. 1) has figures of

¹ Possibly depicted on a food bowl because grasshoppers were eaten by the prehistoric people of the Mimbres.

two birds and two frogs¹ drawn in opposite quadrants, being unique in this particular. The two birds and frogs are not very unlike those already described but have certain characteristic features, especially in the geometric designs on their bodies.

The bowl is warped into an irregular shape and made of thin ware, probably distorted in firing. It was found under the floor of one of the central rooms in the Oldtown ruin, almost completely covering the skeleton of a baby.

On another bowl (pl. 6, fig. 2) there is depicted a frog very like that last mentioned. The frog being an amphibian was undoubtedly greatly revered by the ancient people of the Mimbres Valley.

HORNED SNAKE

The serpent with a horn on the head is pretty generally regarded as a supernatural being, and its pictures and effigies occur on modern Hopi, Zuñi, and other Pueblo paraphernalia. It is an ancient conception, for it is figured on prehistoric pottery from all parts of the Pueblo area, having been found as far south as Casas Grandes in Chihuahua. It is to be expected that a people like the ancient Mimbrenos who adorned their pottery with so many well drawn zoic figures would have included the horned serpent, provided this reptile was a member of their pantheon. The nearest approach to a figure of such a monster is found on a large pottery fragment found by Mr. Osborn twelve miles south of Deming. This fragment covered the cranium of a skeleton and was perforated or "killed" like a whole bowl.

A very large number of pictures of the horned snake from localities all over the Southwest might be mentioned, but a few examples are adequate to show how widespread the conception was in ancient times. They occur among the Tewa, Keres, Zuñi, Hopi and other Pueblos and vary greatly in details, but in all instances preserve the essential symbolic feature—a horn on the head and a serpentine body.

The horned serpent is known to the Hopi as the plumed serpent, and when represented by them has a bundle of hawk feathers as well as a horn attached to the head. Effigies of this being, also with horn

¹ A picture of a horned toad on a food bowl was recorded from Cook's Peak by Professor Webster, and there is a picture of what appears to be the same reptile in Mr. Osborn's collection. It is of course sometimes difficult to positively distinguish representations of frogs, toads, lizards, and Gila monsters, but the anatomical features are often well indicated.

and feathers, are used in several ceremonies, as the Winter Solstice,¹ and a dramatic festival² which occurs yearly in March. Wooden representations of the same horned snake are carried as insignia by a warrior society called the Kwakwantu,³ in the New Fire Ceremony. The priests of the Tewan pueblo, Hano, among the Hopi also have effigies of the horned snake, the worship of which their ancestors brought to Arizona from New Mexico. These effigies are yearly made of clay and form conspicuous objects on the December altars of that pueblo.



FIG. 28.—Serpent. Osborn Ruin. (Osborn collection. E. D. O. Jr. del.)

The head shown in figure 28 has a horn curving forward almost identical with that on the head of a horned serpent on a bowl from Casas Grandes in the Heye collection. Its gracefully sinuous body is decorated with alternating geometric figures, curves and

¹The Winter Solstice Ceremony. *Amer. Anthropol.*, 1st ser., vol. 11, Nos. 3, 4, pp. 65-87, 101-115.

²A Theatrical Performance at Walpi. *Proc. Washington Acad. Sci.*, vol. 2, pp. 605-629. Native pictures of the Hopi horned snake may be found, pl. 26, 21st Ann. Rep. Bur. Amer. Ethnol.

³The horned serpent cult at Walpi is said to have been introduced from the south.

straight lines.¹ Accompanying the figure of a serpent is a well-drawn picture of a turtle which is decorated on the carapace with a rectangular area on which is painted a geometric figure recalling that on bodies of birds and some other animals.

FISHES

One of the bowls (fig. 30) from the Oldtown ruin has two fishes depicted on opposite sides of the inner surface. These fishes resemble trout and are of different colors, black and reddish brown figures



FIG. 30.—Fish. Oldtown Ruin. Diam. 9".

painted on a white ground. They are represented as hanging from two parallel lines surrounding the rim of the bowl. These fishes are so well drawn that there is no doubt what animal was intended to be here represented. On the interior of another bowl excavated by the author at Oldtown there is a picture of a fish which recalls the two

¹Of all the designs representing the horned snake known to the author this picture from the Mimbres resembles most closely the pictures of this being on pottery from Casas Grandes. It has, however, the single horn found on the clay image in the Hano altar of the Winter Solstice Ceremony, although quite unlike figures on pottery from the Pajarito region. The bodily decorations in the Mimbres bowl are unlike those of the Hopi horned snake.

just mentioned.¹ It may be mentioned that fishes are not represented in the beautiful specimens of pottery from Sikyatki,² possibly for the simple reason that there are no streams containing fish in the neighborhood of Hopi ruins. In the Mimbres, however, fish are still found and were no doubt formerly abundant and well known to the prehistoric inhabitants,³ being looked upon by them as water symbols in much the same way as the frog is at present regarded by Zuñi and Hopi.

Another fish figured on a bowl from Oldtown, is unfortunately broken near the tail. The accompanying decoration has apparently another figure behind this fish, but its complete form is obscured by the perforation made in killing the vessel.

The most problematical of all the life figures on the Mimbres pottery is shown in plate 7, figure 2. This figure occurs on a black and white food bowl, eleven inches in diameter, four and one-half inches in depth. In support of the theory that the two figures here depicted represent fishes, we have the pointed head without neck, the operculum as a white crescentic design, two fins (pectoral, ventral, and anal), the median (adipose?) dorsal fin unpaired, and a long tail bifurcated at the extremity. The resemblance of these figures to the undoubted fishes on bowls previously mentioned is conclusive evidence that they represent the same animal.

GEOMETRICAL FIGURES

The geometrical designs on Mimbres pottery are rectangular, curved, and spiral, the first form being the most common. These units are arranged in twos or fours, and although they consist often of zigzag or stepped figures, the triangle and rectangle predominate. The geometrical designs are rarely colored, but commonly filled in with hachures and parallel lines. There are seldom decorations on the outside of the Mimbres bowls, in which respect they differ from ancient Hopi (Sikyatki) vessels elsewhere figured.⁴ Conversely, that part of the interior of the bowl which surrounds the central design, oftentimes elaborately ornamented in Mimbres pottery, is very simply

¹ The Mimbres formerly had many more fishes than at present, and Bartlett records that his men often brought in fine trout for his camp. These, with turkeys, quail, deer and antelopes, led him to say that his "fare might be called sumptuous in some respects" (*op. cit.*, p. 236).

² Fishes are sometimes represented on Keresan pottery.

³ As elsewhere mentioned in this paper, one of the bird figures (fig. 25) has a fish in its mouth.

⁴ 17th Ann. Rep. Bur. Amer. Ethnol., Part 2, figs. 277-355.

decorated in Sikyatki pottery. Encircling lines on Mimbres pottery are continuous, whereas at Sikyatki they are broken at one or more points by intervals known as the "life gateways" or "lines of life."¹ The geometrical figures on the inside of every bowl sometimes surround a central region on which no figures of animals or human beings are drawn, but which is perforated.

The more strikingly characteristic forms of geometrical figures are shown in designs on plate 8. Certain of the geometrical figures drawn on the sides of animals as on the wolf (pl. 2, fig. 1), the antelope (figs. 19 and 20), the mountain sheep (pl. 2, fig. 2), the unidentified animal and bird (figs. 18 and 25), the reptile (fig. 28),



FIG. 31.—Rabbit and geometrical designs.

also appear without the animals and probably have the same significance² in both instances.

No geometrical figures were identified as representing sun, moon, earth, or rain-clouds. A few crosses, circles, triangles, and irregular quadrilateral designs combined with zigzag stepped figures and interlocked spirals and highly interesting swastikas (fig. 31) form the

¹ Ceremonially, every piece of pottery is supposed by the Hopi to be a living being, and when placed in the grave of the owner, it was broken or killed to let the spirit escape to join the spirit of the dead in its future home. There is no evidence that the Sikyatki mortuary pottery was purposely broken when deposited in the grave, and probably no need of perforating it to allow free exit of the spirit, for the broken encircling line, "life gateway," absent in Mimbres pottery, but almost universally present in ancient Hopi pottery, answered the same purpose, in their conception.

² Following Hopi analogies, where these geometrical figures frequently occur with animals they may have the same symbolic meaning as when alone, and represent shrines or prayer-offering houses.

majority of the designs.¹ Several geometric designs, as those on the bodies of figures 25 and 26, appear on Sikyatki pottery (see 17th Ann. Rep. Bur. Amer. Ethnol., plate 121) ; others resemble Pueblo symbols of wide distribution, but the majority are unique. The geometric designs on the bodies of life-figures vary with the animal depicted, but the same genus of animals does not always have the geometric figure, although almost identical designs occur on the bodies of different genera. It is recognized that a comparison of designs on Southwestern pottery shows a general uniformity in geometrical pattern which renders it very difficult to distinguish different local areas of development, and may be the result of more extensive inter-

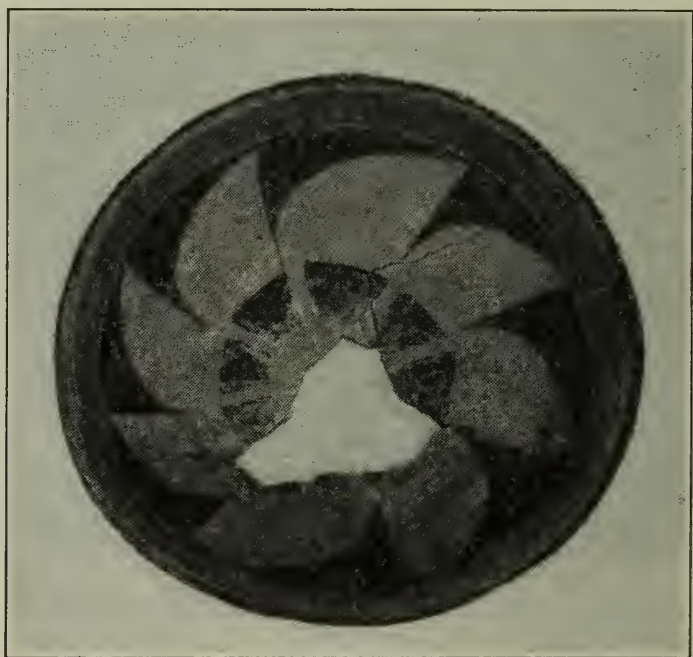


FIG. 32.—Geometrical figure. (Osborn collection.)

change of ideas and a greater uniformity of cultural conditions. The pottery of the Mimbres shares with the rest of the Southwest several well-known geometrical designs which no doubt date back to an earlier epoch than the evolution of animal figures, but it also has several decorations of geometrical patterns (fig. 32) that are peculiar to it and which, taken with the characteristic zoic figures, serve to differentiate it from other local areas. Mimbres pottery as pointed out by others has a general likeness to that from Casas Grandes Valley in Chihuahua, a resemblance which no doubt increases as we follow the river to Lakes Palomas and Guzman.² The resemblance is not close

¹ Unfortunately there are few decorated vases represented in the collection, but exploration in the field may later bring many of these to light.

² The author brought to Washington fragments of a food bowl from the ruin near Byron Ranch, identical with Casas Grandes ware.

enough to indicate identity, but we have enough material to support the belief that the archeological area in which it occurs is Mexican, unlike that of any other ceramic area in Arizona or New Mexico. Here a specialized symbolism has been developed which is different from that of the Rio Grande, or the Upper Gila-Salt area, and that characteristic of the great Lower Gila in which lie the compounds like Casa Grande. The Mimbres Valley archeologically is the northern extension of a culture area which reached its highest development on Casas Grandes River.

CONCLUSIONS

Geographically the Mimbres Valley is the northern extension of the drainage area of the large interior plateau, the lowest level of which is occupied by Palomas, Guzman, and other so-called lakes. The Casas Grandes, Mimbres, and other rivers contribute their scanty waters to these lakes, which have no outlets into the sea. As a rule the thirsty sands along the course of the river drink up the surplus waters of the Mimbres or cause them to sink beneath the surface, to reappear when the configuration of lower clay or rock formations forces them from subterranean courses. Considering the similarity in climatic and geographical conditions in the northern and southern ends of this plateau, we would expect to find cultural likenesses in the prehistoric inhabitants of the Mimbres and Casas Grandes valleys, but such is not the case. The absence of relief decoration combined with painting, so common in the pottery from the Casas Grandes region, separates the Mimbres ware from that found far to the south.¹

There are evidences that the course of the Mimbres River through Antelope Plain has from time to time changed considerably, and although a section of its bed now lies east of the Florida Mountains, the river probably formerly made its way to the west of the same in its course to Mexico. Modifications or changes in the bed of this river have had in the past much to do with the shifting of population and obliteration of prehistoric sites, either by washing them away entirely or burying them out of sight or deeply below the surface. This concealment of evidences of prehistoric occupancy has also been aided by frequent sandstorms, when considerable quantities of soil have been transported from place to place and deposited on walls or covered implements lying on the surface of the ground. It is also

¹ We must look to renewed explorations to shed light on this and many other questions which the paucity of material is yet insufficient to answer.

possible that there has been a slow change of climate, causing a desiccation which may have been so widespread that the inhabitants of the plain were driven up river into the hills where water was more abundant, but it is well to remember that abandoned settlements or ruins exist on the banks of the Mimbres where there is still abundant water, as well as in the plain which is dry.

The depth of the present water level, as shown by drilling for wells, varies in different places in the valley, but in the neighborhood of the hills there are many springs. The configuration of the surface of the hard clay strata lying beneath the soil here and there often forces the water to rise to the surface, and ruins occur at points where at present there are no signs of surface water, although at the time they were inhabited there may have been more water.¹ Whether or not this water was brought to certain ruins by a system of artificial irrigation, the canals of which have been obliterated, we cannot say, but there is only scanty evidence that the climate here, as elsewhere, has radically changed since man occupied the valley.²

Although there is a remote likeness between the terraced house or pueblo community of northern New Mexico³ and the prehistoric houses of the Lower Mimbres, its closest resemblance is to an antecedent type, for it is possible that the terraced pueblo culture in the Rio Grande Valley was preceded by another. This earlier type of habitation of the Mimbres Valley was like the fragile-walled house of the natives inhabiting a large part of Arizona and New Mexico before the Puebloan, and we have evidence that this older style of building was scattered over the present Pueblo area. There is no evidence of a terraced dwelling or pueblo more than one story high

¹ In dry seasons the river flows under the superficial soil at a varying depth, but in floods it follows the surface bed.

² As the author has pointed out in several articles, the abandonment of Southwestern ruins is due to a variety of causes, chief of which are changes of climate. It is often due to other more local causes, as attacks by hostiles, salinity of soil, poor site for defence, presence of wizards, contagious diseases, etc.

³ The designation "pueblo ruins" sometimes applied to any cluster of ancient house walls in Colorado, Utah, New Mexico, and Arizona, should be restricted to a well-defined architectural type which originated and reached its highest development in a small area in New Mexico. It was eventually carried by colonists in all directions from the center of origin, becoming intrusive as far west as the Hopi, Zuñi, and Little Colorado. The boundaries of this type never extended into Mexico in prehistoric times. The ruins along the Mimbres are not community houses of terraced character and should not be called pueblo ruins.

in the Mimbres or the inland basin in which it lies. In other words the ruins of the Mimbres may be regarded as older than true pueblo ruins, resembling an earlier type of dwelling that antedated, in the Rio Grande Valley, the terraced houses.

The author does not find any architectural features in the remains of the prehistoric habitations of the Mimbres Valley suggesting Casa Grande compounds, or those massive buildings with encircling walls which are characteristic of the plains of the Gila. Although the walls of the Casas Grandes, in Chihuahua, are constructed in the same way and out of material like those of Casa Grande on the Gila, the architectural feature, an encircling wall of the latter, has not yet been recognized on the Sierra Madre plateau.¹ Objects found in the Gila ruins are somewhat different in form from those of Chihuahua, while pottery from the Gila Valley ruins and that from the inland plateau in northern Chihuahua is markedly different, with very divergent symbolism. Not only do forms of stone implements of a shape unknown in southern Arizona occur in southern New Mexico, but also the methods of disposal of the dead differed among the two people. The latter practised inhumation only, the other both cremation and inhumation. The aborigines of the Mimbres Valley placed a bowl over the head or face of the dead, a practice which, so far as known, does not appear to have been so commonly in vogue in inhumation of the prehistoric people of the Lower Gila plains.

The conventional geometric symbols on prehistoric Mimbres pottery are readily distinguished from those on ware from Tulerosa, a tributary of the San Francisco. The most significant feature of the Mimbres pottery is that fifty per cent of the figures on it represent men or animals, while out of a hundred bowls from the Gila not more than two or three are ornamented with zoic designs. As we know comparatively nothing of the pottery of the sources of the Upper Gila and that part of its course which lies between the Tulerosa and the Mimbres, we can at present venture very little information on ceramic relations, but similarities or mixtures would naturally be expected, due to contact or overlapping, the type of the one valley overlaying that of the other or mingling with it.

The sources of the Upper Salt, the largest tributary of the Gila, lie far from the Mimbres, and close relationship in the pottery of the

¹ This statement is made with reservation, as the true architectural form of the Casas Grandes of Chihuahua is not yet known. The published plans show no encircling wall like that of Casa Grande on the Gila; probably the Casas Grandes of Chihuahua belong to a highly specialized type different from others.

ancient people inhabiting its banks is not found or expected. It is not known whether the pottery from the Upper Salt and that from the Upper Gila is similar, for our museums have no extensive collections from the latter region from which to make comparisons and draw conclusions. We know practically nothing of the prehistoric culture of the Upper Gila.

The aborigines of the Mimbres, like those of some of the former dwellers in Pajarito Park in New Mexico, practised a modified form of urn burial, but the latter rarely decorated their pottery with figures of animals. As compared with known Pueblo ceramics, the Mimbres pottery appears to be more closely allied to ancient Keresan than to old Tewan. Judging from what remains, the houses architecturally had little in common with true pueblos.¹ There are no evidences of circular subterranean kivas with pilasters, ventilators, deflectors, and niches, as in northern New Mexico, although there is a fairly large proportion of subterranean rooms or pit dwellings which may have been their prototypes. Architecturally the prehistoric habitations of the Mimbres Valley represent an old house form widely distributed in the Pueblo region or that antedating the pueblo or terraced-house type before the kiva had developed.

There are not sufficient data at hand to determine satisfactorily the kinship of the prehistoric inhabitants of Mimbres Valley, but as far as may be judged by pottery symbols it may be supposed that their culture resembled that of other sedentary people of New Mexico and Arizona in early times, as well as that of peoples of Chihuahua. It appears to the author that there are so many cultural similarities among the sedentary people which inhabited the Sierra Madre plateau, of which the Antelope Plain of Mimbres Valley is only a northern extension, that we may regard their culture as closely related. A specialized high development of this inland culture took place along the Casas Grandes River, culminating in Chihuahua. The Mimbres Valley was inhabited by people somewhat less developed in culture.

Although the ancients of the Mimbres were related on the one side to the Pueblos of New Mexico and on the other to more southern people, that relationship existed between the ancestors of the same rather than with modern Pueblos, and reached back to a time before

¹ While neither the terraced nor the "compound" type of architecture has been seen in the Mimbres for the reason that both were specialized in their distinct geographical areas, the fragile-walled, jacal type of habitation is identical in form, though not in time, in all three localities.

the terraced communal house type originated. This type of house arose in northern New Mexico and spreading from this center extended down the San Juan as far as the Hopi, while modifications are also found in certain ruins on the Gila and Little Colorado, which, like Zuñi, it profoundly influenced, but its influence never reached as far as the Lower Mimbres.

A comparison of the limited archeological material from the Mimbres with that from other localities in the Southwest suggests a provisional hypothesis that the prehistoric culture of this valley was not modified by terraced architecture nor greatly affected by that of the Lower Gila type, both of which evolved independently and locally, but belonged to an older type with which it had much in common.



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FIG. 1.—WOMAN DANCER. BLACK AND WHITE WARE. 12 BY 6 INCHES. OSBORN RUIN
FIG. 2.—DANCING FIGURE. RED DECORATION. DIAMETER 5 INCHES. OSBORN RUIN



FIG. 1. TWO WOLVES. BLACK AND WHITE WARE. 11 BY 5½ INCHES. OSBORN RUIN



FIG. 2. MOUNTAIN SHEEP BLACK AND WHITE WARE. 11 BY 5½ INCHES. OSBORN RUIN



1



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FIG. 1.—BIRD A. RED AND WHITE WARE. 9 BY 4 INCHES. OSBORN RUIN
FIG. 2.—BIRD B. BLACK AND WHITE WARE. 10 BY 5 INCHES. OSBORN RUIN



FIG. 1. BIRD C. BLACK AND WHITE WARE. 10 BY 5½ INCHES. OSBORN RUIN



FIG. 2. BIRD F. RED AND WHITE WARE. DIAMETER 8 INCHES. OSBORN RUIN



1



2

FIG. 1.—PROBLEMATICAL ANIMAL. BLACK AND WHITE WARE. 15 BY 6 INCHES. OSBORN RUIN
FIG. 2.—PROBLEMATICAL ANIMAL. RED DECORATION. OSBORN RUIN



1



2

FIG. 1.—GRASSHOPPER. RED FIGURE. DIAMETER 5 INCHES. OSBORN RUIN

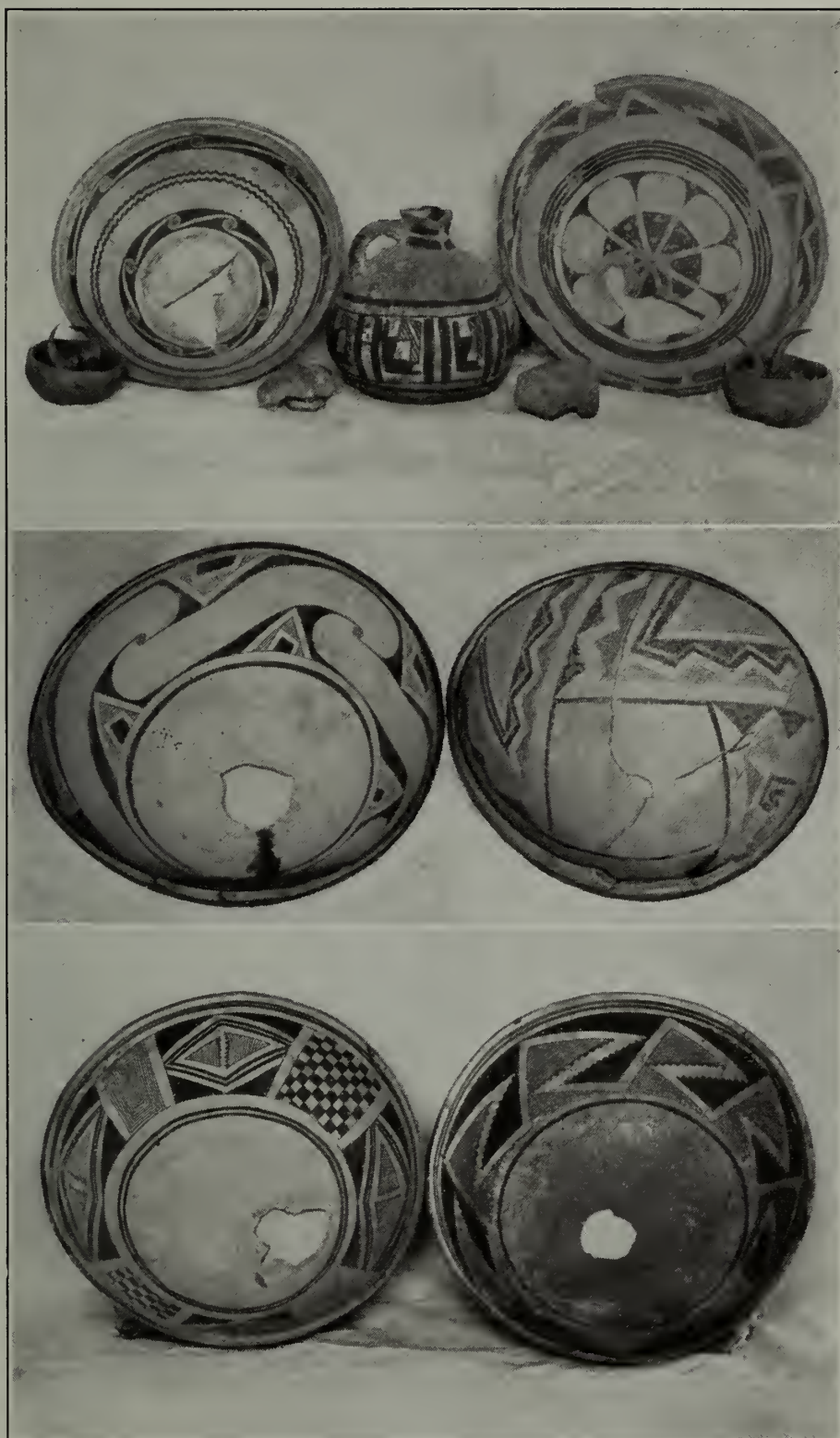
FIG. 2.—FROG. DIAMETER 10 INCHES. OSBORN RUIN



FIG. 1. FROGS AND BIRDS. BLACK AND WHITE WARE. DIAMETER ABOUT 12 INCHES
OLDTOWN RUIN



FIG. 2. FISHES. BLACK AND WHITE WARE. 11 BY 4½ INCHES



GEOMETRICAL DESIGNS. DIAMETER $\frac{1}{7}$ NATURAL SIZE

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